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ABSTRACT

The Association of American Medical Colleges launched Project 3000 by 2000 in November 1991 to address the under-representation of Blacks, American Indians, Mexican Americans, and Mainland Puerto Ricans in medical schools. Its aim is to increase the number of under-represented minorities entering medical schools to 3,000 by the year 2000. As part of this initiative, the "Secondary School Science Minority Achievement Registry" (S3MAR) presents in this volume a resource guide containing information about programs serving minority high school students who are interested in the health professions. Each of the programs listed in this guide provides students with substantive classroom or laboratory-based learning opportunities. All programs are at least 4 weeks, full-time, with substantial minority participation. The directory of 92 programs is designed for use by students, parents, teachers, and other educators. States are listed alphabetically, with programs in each state sorted into enrichment, laboratory, magnet, and National Institutes of Health programs. Volume II is a registry containing names, addresses, and career interests of participants in these programs. Volume II is distributed only to educators for student recruitment purposes. (SLD)

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ED 409 398

ASSOCIATION OF AMERICAN MEDICAL COLLEGES

SECONDARY SCHOOL SCIENCE MINORITY ACHIEVEMENT REGISTRY

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Office of Educational Research and Improvement
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PROJECT 3000 BY 2000

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S³MAR Program Directory 1996-97

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SECONDARY SCHOOL SCIENCE MINORITY ACHIEVEMENT REGISTRY

Volume I

PROJECT 3000 BY 2000

S³MAR Program Directory 1996-97

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Association of American Medical Colleges
Division of Community and Minority Programs
2450 N Street NW
Washington, DC 20037-1127
Tel: 202-828-0584

* Volume II available only to educators for use in recruitment or program evaluation.

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Project 3000 by 2000

The Association of American Medical Colleges (AAMC) launched *Project 3000 by 2000* in November of 1991 to address the continuing underrepresentation of Blacks, American Indians, Mexican Americans, and Mainland Puerto Ricans in medical schools. While the *Project* derives its name from the goal of increasing the number of underrepresented minority (URM) students annually entering medical school to 3,000 by the year 2000, virtually all health science graduate and professional programs are similarly plagued by minority underrepresentation. Recognizing this, the AAMC also created the National Network for Health Science Partnerships (NESPA) to unite medical schools and teaching hospitals with educators from other health professions schools, undergraduate and postgraduate science programs, and local school systems to increase opportunities for minority and disadvantaged students in all graduate and professional health science programs.

Project 3000 by 2000 calls on all health science educators to review the adequacy of the programs and policies of their own schools as well as those of schools and colleges in the regions they serve. After completing this analysis, it calls on all interested parties to work in partnership to develop comprehensive educational strategies to improve minority student achievement--especially in the sciences--with the ultimate goal of increasing minority representation in medicine and other health-related fields.

In addition to the many fine recruitment and enrichment programs that medical and other health professions schools have long administered, the *Project* advocates fundamental and systemic reforms to enhance educational opportunities at the high school and college levels. These include the development of an extensive network of academically rigorous and supportive magnet health science high schools and close collaboration between these schools, undergraduate colleges, and health professions schools in the areas of curriculum and admissions.

To promote this agenda, the AAMC provides the following resources:

- **Health Professions Partnership Initiative (HPPI)**. With funding support from the Robert Wood Johnson Foundation, the HPPI currently supports 10 *Project 3000 by 2000* partnerships around the country. A second round of funding will be announced soon.
- ***Project 3000 by 2000 Technical Assistance Manual: Guidelines for Action and accompanying School Data Supplements***. *Guidelines for Action* highlights effective strategies to increase the number of underrepresented minority applicants and matriculants to medical and other health professions schools. In addition, each medical school has received a customized *School Data Supplement* providing medical educators with detailed information about its local minority applicant pool, from the precollege level, onward.
- ***NESPA NEWS***, a quarterly newspaper distributed free of charge to educators at all stages of the educational pipeline who are working to enhance opportunities for minority students in the health sciences.
- ***Secondary School Science Minority Achievement Registry (S³MAR)*** - two volumes. Volume I is a resource guide containing information about programs serving minority high school students who are interested in the health professions. Volume II is a registry containing the names, addresses, and career interests of participants in those programs. Volume II is distributed to educators for recruitment purposes.

Project 3000 by 2000

- ***The Grapevine***, a newsletter distributed three times per year to students listed in the *S³MAR* Volume I and to other interested high school students, upon request. The newsletter provides information on various health science careers and tips on how to prepare for these careers.
- ***Project 3000 by 2000 Progress Reports (Annual)***. An overview of progress made in developing educational programs and partnerships, and in change in the number of under-represented minority applicants and matriculants to U.S. medical schools.
- ***NESPA On-Line!*** An Internet information service for educators in the NESPA Network and others interested in achieving the goals of the *Project*. *NESPA On-Line!* can be found at http://www.aamc.org. A list server also is provided to promote dialogue among educators. To subscribe, send an e-mail message to majordomo@aamcinfo.aamc.org.
- Technical assistance in the form of workshops, meetings, and consultations for educators and health sciences educators working to implement *Project 3000 by 2000*.

Other ongoing programs and initiatives of the Association of American Medical Colleges also play important roles in achieving the objectives of *Project 3000 by 2000*. Among them are:

- The Robert Wood Johnson Foundation-funded **Minority Medical Education Program,** providing intensive educational enrichment during the summer to hundreds of college students at eight sites around the country.
- **Expanded Minority Admissions Exercise (EMAE)**, an exercise that highlights the importance of non-cognitive variables in the medical school admission process.
- ***The Minority Student Opportunities in United States Medical Schools,*** a publication highlighting medical schools' programs and policies that may be of particular interest to minority students.
- ***Minority Students in Medical Education: Facts and Figures***, a statistical compendium focussing on minority medical school applicants, students and graduates.

Since 1990, the number of URM students entering U.S. medical schools has increased 37 percent, from 1,470 to 2,010 in 1995. All schools have local *Project 3000 by 2000* coordinators and dozens of new partnerships and programs have been created to increase the number of URM students who are interested in and academically prepared to pursue careers in medicine and related fields. The *Project's* continued success depends upon the degree to which educators from school systems, colleges, medical schools, and other health professions schools work together to improve educational opportunities for, and academic achievement of, minority students interested in the health sciences.

Acknowledgements

The Secondary School Science Minority Achievement Registry (*S³MAR*) is the result of much work and planning on the part of many people. Again, we are especially indebted to the students who diligently completed the student data forms and to the program directors and their staffs who helped administer the forms and provided us with the necessary information.

We are grateful to Charles Killian and Mario Rivera in the AAMC Office of Informational Resources for their assistance. We also appreciate the efforts of Dick Randlett, Jon Woods, and Christina Searcy in the Section for Student Services who helped us with the data entry.

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Herbert W. Nickens, M.D., M.A.
Vice President for Community and Minority Programs
Association of American Medical Colleges

Introduction

The *Secondary School Science Minority Achievement Registry* (*S³MAR*) is a component of *Project 3000 by 2000*, the Association of American Medical Colleges' campaign to dramatically increase the number of underrepresented minority students annually entering U.S. medical schools and related health science programs. The *S³MAR* provides information about educational programs serving minority high school students who are interested in the health sciences as well as a listing of names, addresses, and career interests of students participating in those programs.

The *S³MAR* is published in two volumes, one or both of which may be of interest to readers with different needs. The Program Directory (Volume I) contains descriptions of educational programs in the health sciences for students of high school age. Each of the programs listed in Volume I provides students with substantive classroom and/or laboratory-based learning opportunities. All programs are at least four weeks, full-time, and have substantial minority participation. The Program Directory is designed to be used by high school students, their parents, teachers, and other educators who are interested in providing more minority students with learning opportunities that will help them successfully pursue a career in the health sciences.

The Student Listing (Volume II) is designed to be used primarily by college and health professions educators for the purpose of identifying and recruiting students who have demonstrated a serious interest in the health sciences through their participation in one of these programs. Information in the student listing was provided by the students themselves, who completed survey questionnaires. The questionnaires were collected by the directors of the various programs and forwarded to the AAMC for inclusion in the *S³MAR*. Program Directors also collected and maintained on file statements of informed consent signed by each student and his or her parent or guardian.

The *S³MAR* is integral to the success of *Project 3000 by 2000* in that it will help:

- students interested in the health sciences to locate programs through which they can develop their knowledge and skills;
- college educators to recruit promising minority students interested in the health sciences; and
- local *Project* Coordinators to identify and follow precollege students interested in the heatlh sciences and, to the extent possible, enable those students to have access to the resources they need to achieve their goals.

The *S³MAR* also is intended to assist minority high school students who may be interested in medicine and other graduate and professional health science programs where minorities are severely underrepresented. Students can only benefit from the increased interest of educators from a variety of academic and professional fields who seek to improve minority student opportunities in the health sciences. Therefore, we hope that the *S³MAR* will be used extensively by educators from various health-related professions and academic disciplines.

User's Guide

How to Use the *S³MAR* Program Directory

Volume I lists programs by state and program type. The states are listed alphabetically. Within each state, programs are sorted into four categories. The following program categories appear at the outside top corner of each page:

- **Enrichment Programs (ENR)** - Any classroom-based academic program administered during the summer, after-school, and/or Saturdays. These programs may also have laboratory or clinical internship components.

- **Laboratory Programs (LAB)** - Any laboratory-based research apprenticeships other than those funded by the National Institutes of Health.

- **Magnet Programs (MAG)** - Magnet and/or enriched curriculum health science high school programs. Complete college preparatory high school curriculum (grades 9 through 12) featuring specialized classroom, laboratory and/or clinical learning opportunities related to medicine and health care. A magnet program may be a "school within a school," in which participating students take all or most of their classes together, or a separate school housed in its own building.

- **NIH Programs (NIH)** - Laboratory-based research apprenticeships for minority students supported by the National Institutes of Health.

Each program description contains 12 standard categories that quickly provide students, parents, and educators with needed information. The first category lists the name of the program and program code. The code contains three elements: program type (as described above), state in which the program is located, and ID number. For example, "ENR-AZ-01" indicates that the program is an enrichment program located in the state of Arizona with an ID number 01. This is identified as the Med-START program at the University of Arizona College of Medicine in Tucson. The code enables cross-referencing with the Student Listing. Each student entry in Volume II includes the code for the program in which the student participated.

Besides the program name and corresponding code, each entry in the Program Directory also contains the name of the program director, address and telephone number, sponsoring institution, institutional partner(s) that collaborate(s) with the sponsoring institution, year begun, duration of program, average number of participants per year, grade level of participants, program objectives, content, and evaluation information. A "N/A" under any of these headings indicates that no information about that category is available for that program.

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Health Careers Opportunity Program (HCOP)
ENR-AL-03

Director
Shiva P. Singh, Ph.D.

Address
Biomedical Research & Training Programs
Alabama State University
915 South Jackson Street
Montgomery, AL 36101-0271
Tel: 334-229-4301
Fax: 334-229-4288

Institutional Sponsor
Alabama State University

Institutional Partner
None

Year Begun
1995

Duration of Program
Academic year (8 weeks during summer)

Average Number of Participants
50 per year

Grade Level of Participants
Grades 11 to 12 & college freshmen

Objectives
To facilitate the entry of students into health and allied health professions.

Content
Students participating in HCOP follow a prehealth academic track and are involved in enrichment activities year round. Courses on science and math are offered as well as seminars on skills and health professions. Health career club activities and field trips to hospitals and other health professions schools are also organized. Participants receive a stipend and remission of standardized test and application fees to health professions schools.

Evaluation
Since this is the second year of the program, evaluation data is not available.

Advanced Honors Program
MAG-AL-01

Director
Nancy P. Chaltry, M.Ed.

Address
Choctaw County High School
201 Rogers Avenue
Butler, AL 36904
Tel: 205-459-2139
Fax: 205-459-2277

Institutional Sponsor
Ventures in Education

Institutional Partner
None

Year Begun
1986

Duration of Program
Academic year (4 years)

Average Number of Participants
85 per year

Grade Level of Participants
Grades 9 to 12

Objectives
To encourage students who have demonstrated academic excellence to consider careers in health-related fields, especially health care in rural areas.

Content
The curriculum is enhanced in all academic areas and features college-level courses in English and history. It is designed to provide students with the academic skills necessary for entry into college and for the successful completion of their undergraduate degree programs.

Evaluation
Approximately 70 percent of the graduates are currently enrolled in degree programs in college. Of these, 30 percent are earning degrees in health-related fields.

NCRR Minority Initiative: K-12 Teachers & High School Students
NIH-AL-03

Director
Terry L. Hickey, Ph.D.
Cynthia Scott (Coordinator)

Address
University of Alabama at Birmingham
Office of the Vice President for Health Affairs
701 South 20th Street, AB 7th Floor
Birmingham, AL 35294-2010
Tel: 205-934-0513
Fax: 205-975-7677

Institutional Sponsor
University of Alabama at Birmingham

Institutional Partner
None

Year Begun
1980

Duration of Program
9 weeks during summer

Average Number of Participants
20 per year

Grade Level of Participants
High school juniors & seniors

Objectives
To expose students to the variety of careers in biomedical research and health-related professions and to make them aware of the education and skills required for success in these fields.

Content
The program is for students who have demonstrated academic excellence and have expressed an interest in, and aptitude for science and math. Students are placed in a research laboratory at the University of Alabama at Birmingham and work with a mentor in a biomedical or clinical research setting. The program also offers seminars on scientific writing, radiation safety, CPR, diversity in the workplace, and preparation for college.

Evaluation
Evaluation data are available for those enrolled in the program since 1989. Of the 71 mostly Black participants, 59 or 84 percent are currently enrolled in college. Of these, 16 are majoring in biology or premedicine, 15 are engineering majors, and another 15 are in health-related fields such as nursing, physical therapy, or psychology. The remaining 25 students who responded to the survey are either majoring in nonscience areas or did not indicate their majors.

Summer High School Research Apprentice Program
NIH-AL-07

Director
Shiva P. Singh, Ph.D.

Address
Alabama State University
Biomedical Research & Training Programs
915 South Jackson Street
Montgomery, AL 36101-0271
Tel: 334-229-4301
Fax: 334-229-4288

Institutional Sponsor
Alabama State University

Institutional Partner
None

Year Begun
1985

Duration of Program
8 weeks during summer

Average Number of Participants
8 to 10 students, 3 teachers per year

Grade Level of Participants
Grades 10 to 12

Objectives
To introduce students to biomedical research.

Content
Students, especially juniors and seniors, are selected based on academic qualifications, interests in biomedical research careers, teachers' recommendations, and personal interviews. This program provides students with meaningful experiences in various aspects of health-related research in order to stimulate their interests in science careers. They get an opportunity to work full-time on ongoing biomedical research projects.

Evaluation
Over 90 percent of the student participants went on to enroll in college with a majority choosing science or science-related majors.

Med-START Program
ENR-AZ-01

Director
Linda K. Don, M.Ed.

Address
University of Arizona College of Medicine
Minority Affairs Office
Room 1119B
Tucson, AZ 85724
Tel: 602-621-5531
Fax: 602-626-4884

Institutional Sponsor
University of Arizona College of Medicine

Institutional Partner
None

Year Begun
1973

Duration of Program
6 weeks during summer

Average Number of Participants
72 per year

Grade Level of Participants
High school juniors & seniors

Objectives

This program is designed for minority, rural area, and/or economically-disadvantaged students who are interested in health careers. Besides helping students to explore the possibilities of health careers, the ultimate goal is to increase the number of minority health care providers in Arizona and to improve health care in rural and economically-disadvantaged areas.

Content

This six-week program is held on the University of Arizona campus. Students get to experience a taste of college life, take a college-level English class, explore health careers, volunteer in a hospital or clinic, and learn about CPR. The program allows them to work in a medical school and veterinary science laboratory settings. Students serve in a variety of roles such as nursing assistants, X-ray technical assistants, and radiology assistants. Field trips to Arizona Health Sciences Center, guest lectures, and career counseling are also offered.

Evaluation

An independent study of 369 Med-START graduates revealed that two percent were in medical school, five percent had health degrees, i.e., M.D., pharmacy, and nursing, 45 percent were in college with a health major, 17 percent were in college with an unknown major, three percent were in health training programs (paraprofessional), 17 percent had dropped out of college, 12 percent had no postsecondary education, and two percent were working in the health field with no postsecondary education (*Journal of Medical Education*, Vol. 57, July 1982: 527-534).

Next Century Warriors Program
MAG-AZ-01

Director
LeRoy Shingoitewa
Mansel A. Nelson (Coordinator)

Address
Tuba City High School
P. O. Box 67
Warrior Drive
Tuba City, AZ 86045
Tel: 602-283-6291
Fax: 602-283-5105
E-mail: man2@tntnet.slc.nau.edu

Institutional Sponsors
Tuba City Unified School District No. 15,
Ventures in Education

Institutional Partner
Northern Arizona University

Year Begun
1985

Duration of Program
Academic year

Average Number of Participants
150 per year

Grade Level of Participants
Grades 9 to 12

Objectives
The primary objective is to increase the number of Native Americans in the scientific and health professions by offering capable students a course of study that will enable them to gain entry into colleges and teach them skills necessary to compete successfully at this level and beyond. A second objective is to enhance the overall quality of education for students at Tuba City High School.

Content
The program consists of "four schools or houses within a school" and offers a rigorous curriculum in English, social studies, math, and science. For example, the MASH house serves students who are interested in math, biology, chemistry, and the health professions. Other enrichment activities, parental involvement, a staff development component, and expanded guidance and counseling services are also available.

Evaluation
The Next Century Warriors Program graduated its first class in 1989. Scores on the SAT, ACT, and various advanced placement examinations have improved. Many graduates have been accepted into colleges and have performed well. In 1992 Tuba City High School was one of the 13 schools in the nation to be awarded a Next Century School Grant by R.J.R. Nabisco.

Minority High School Student Research Apprentice Program
NIH-AR-01

Director
Phillip L. Rayford, Ph.D.
Edna Strong (Coordinator)

Address
University of Arkansas for Medical Sciences
College of Medicine
4301 West Markham, Slot 505
Little Rock, AR 72205
Tel: 501-686-7299
Fax: 501-686-8167

Institutional Sponsor
University of Arkansas for Medical Sciences
College of Medicine

Institutional Partner
Arkansas Medical, Dental, & Pharmaceutical Association (AMDPA)

Year Begun
1989

Duration of Program
8 weeks during summer

Average Number of Participants
10 to 12 per year

Grade Level of Participants
Grades 11 to 12

Objectives
The purpose of this program is to stimulate among minority high school students an interest in pursuing careers in biomedical research and the health professions. It also provides high school science teachers with hands-on experiences that should help them take back to the classroom a renewed sense of the excitement of research which should stimulate their students to pursue scientific careers.

Content
Students are assigned to investigators involved in medical research who are committed to developing in them both an understanding of the research in which they participate and of the technical skills involved. Teachers are assigned to investigators who design an appropriate summer research project to update their skills in modern research tools and techniques and broaden their knowledge of scientific concepts.

Evaluation
Ninety-seven students have participated in this program. Seventy-four of these participants have matriculated into colleges, of which seven graduated with a bachelor's degree. Three of the college graduates are enrolled in medical or dental school and four have chosen non-health professions. Twenty-eight of the 97 participants are attending high school with an average GPA of 3.85.

Stanford Medical Youth Science Program (SMYSP)
ENR-CA-03

Director
Marilyn A. Winkleby, Ph.D.

Address
Stanford University Medical Center
Stanford Center for Research in Disease Prevention & Department of Medicine
1000 Welch Road
Stanford, CA 94304
Tel: 415-723-7055
Fax: 415-725-6906

Institutional Sponsor
Stanford University Hospital

Institutional Partners
SMYSP Steering Committee, Local Foundations

Year Begun
1988

Duration of Program
5 weeks each summer

Average Number of Participants
22 per year

Grade Level of Participants
Grades 10 to 11

Objectives
The five-week SMYSP brings 22 financially disadvantaged and academically talented high school students from northern and central California to Stanford University for educational advancement opportunities in biological and medical education and health care training. The program targets youth who are the first in their family to attend college and those who experience barriers to higher education. A major goal is to encourage the entry of ethnic minority and financially disadvantaged youth into health-related professions.

Content
The curriculum includes lectures and laboratory practicums on the basic sciences and public health, study skills, public speaking, and computer use. The students live on campus with Stanford undergraduates who serve as counselors and mentors. Each student works with physicians and other health professionals two days a week at Stanford University Hospital. Workshops and reunions continue after the group has graduated to help them maintain the relationships they have established and to provide further guidance about college applications and financial aid. All Stanford faculty, staff, and administrative time is donated.

Stanford Medical Youth Science Program
(SMYSP)
ENR-CA-03

Evaluation
Since 1988, 169 students have graduated from the program. All of the college-aged participants are enrolled in universities, including the University of California (58.3%), Stanford (7.9%), and Ivy League schools (3.9%). Eighty-one percent of those who have declared a major are majoring in biomedical or physical sciences. The majority are considering careers in medicine or other health-related fields. The first students from SMYSP are now applying and being accepted by some of the top medical schools in the nation. Two young graduates from rural California farming communities are now second-year medical students, one at the University of Washington and the other at Harvard (*Academic Medicine*, Vol. 71, No. 5, May 1996, p. 419).

Medical-Counseling, Organizing & Recruiting (Med-COR) Program
ENR-CA-06

Director
John A. Davis, Ph.D.
Doris McClain (Coordinator)

Address
University of Southern California
School of Medicine
Med-COR Office
Park View Medical Building, Room 301C
1420 North San Pablo Street
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Tel: 213-342-1882
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Institutional Sponsor
University of Southern California
School of Medicine

Institutional Partner
Los Angeles Unified School District (LAUSD)

Year Begun
1970

Duration of Program
Year round

Average Number of Participants
900 per year

Grade Level of Participants
Grades 8 to 12

Objectives
To prepare students academically and socially so they can enter college, major in sciences, and successfully gain entry into health professional schools.

Content
Med-COR, a high school academic enrichment program, offers courses in the sciences and field experience in hospitals and laboratories and has three components: Saturday School Year Program, the Summer Program, and the Family Core Unit Program. During the Saturday School Year Program, academic skills in English, study skills, and math and science are stressed. Consultant teachers from LAUSD work together to develop conceptual understanding of the subject areas. Tutoring by advanced college students is available in a classroom format. Findings have shown that it is the bonding between these tutors and Med-COR students that is the most rewarding to the youngsters. Other health-related activities include presentations, films, lectures by physicians, rap sessions, symposiums, and organized tours of medical facilities and local universities. The Summer Program offers summer work and study. Selected participants are provided six weeks of work study at local hospitals. In addition, high school seniors get to work with doctors in laboratory research.

Medical-Counseling, Organizing & Recruiting (Med-COR) Program
ENR-CA-06

Evaluation

A study was done on 480 students who participated in Med-COR over the five years between 1973 to 1977. Of the 410 students who were graduates of the program (completed the full three years), 240 responded. The survey revealed that 10 had completed medical school, 15 were in medical school, six were in dental or pharmacy school, 21 were enrolled in nonhealth graduate school, and 188 were undergraduate college students. Of the 188 undergraduates, 88 were premedical students, 37 were in prenursing, 10 were in other allied health fields, 29 were nonhealth majors, and 24 were undecided. Assuming that every student who had started Med-COR as of 1971 had the potential to enter medical school, there would have been 120 eligible candidates as of 1977. The 15 students enrolled in medical school represent 13 percent of that pool. The six students in dentistry and pharmacy account for five percent, increasing the percentage to 18 percent. Of the remaining 99 eligible students, 51 were enrolled in either nursing or other allied health programs which represents a 52 percent success rate for the program. The net result is that 68 percent of the eligible 120 students were successful at gaining admission to medical or health professional schools (*Journal of Medical Education*, Vol. 57, July 1982: 527-534). Of the 60 to 70 percent who have completed the program since its inception, approximately 98 percent go on to college (*USCity*, Fall 1993, p. 3).

In 1996, a study was done on some 135 seniors. Of these, 98 percent indicated they will attend four-year universities while the rest will attend two-year community colleges. This group of Med-COR participants has a GPA of 3.5 and an SAT score of 980.

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UCLA High School Student Premedical Enrichment Program
ENR-CA-07

Director
Francisco J. Barbosa

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Tel: 310-825-3575
Fax: 310-206-7180

Institutional Sponsor
University of California-Los Angeles
School of Medicine

Institutional Partner
None

Year Begun
1989

Duration of Program
6 weeks during summer

Average Number of Participants
10 per year

Grade Level of Participants
Grades 10 to 12

Objectives
To provide promising and highly motivated high school students from groups that are under-represented in medicine a program to strengthen their interest, ability, and readiness to pursue a premedical curriculum in college.

Content
During the six weeks, students are exposed to clinical medicine or biomedical research under the mentorship of the medical faculty. Preceptorial and observational experiences are supplemented with guest lectures from health care professionals, academic reinforcement workshops on verbal reasoning, critical thinking, math and study skills, and self-development workshops.

Evaluation
Student progress is evaluated by preceptors and teaching staff during the program on the basis of academic improvement, motivation, responsibility, and attendance. At the end of the program, participants evaluate the program based on continued interest in health science careers, overall satisfaction with the activities, and perceived usefulness of the experience. A tracking system is currently being developed to follow participants in their educational progress and career development in order to evaluate the program's effectiveness.

Toyota High School Student Research Apprentice Program
LAB-CA-01

Director
Paul M. Salvaterra, Ph.D.

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Beckman Research Institute
of the City of Hope
Division of Neurosciences
1450 East Duarte Road
Duarte, CA 91010
Tel: 818-301-8364
Fax: 818-301-8908

Institutional Sponsor
Beckman Research Institute
of the City of Hope

Institutional Partner
None

Year Begun
1995

Duration of Program
10 weeks during summer

Average Number of Participants
5 per year

Grade Level of Participants
Grade 10 to 12

Objectives
To provide outside-the-classroom opportunities for high school students who are considering careers in biomedical research or related fields, give them meaningful summer jobs, and increase the pool of scientists.

Content
Students are selected based on demonstrated academic excellence and recommendations from their science teachers. They work on assigned projects in a laboratory and learn about different areas of science. All students meet weekly to discuss their projects. Professional staff are sometimes invited as guest speakers at these meetings. They update the students on various research programs, explain specific services provided to the laboratories, or give a presentation about other programs in progress. These weekly meetings provide an interchange among the students and staff and give the students more information about research on the campus.

Evaluation
Sponsoring staff members evaluate the students' progress during the course of their laboratory experience. Many students return to participate in the program in subsequent years, either at the high school or undergraduate level. Some have become permanent employees after completing their education.

King/Drew Medical Magnet High School Program
MAG-CA-01

Director
Ernie Roy
Edna Marlbrough (Coordinator)

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King/Drew Medical Magnet High School
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Los Angeles, CA 90059
Tel: 213-566-0420
Fax: 213-567-1429

Institutional Sponsor
King/Drew Medical Magnet High School

Institutional Partners
Charles Drew University of Medicine & Science,
Martin L. King Junior Hospital,
Los Angeles Unified School District

Year Begun
1985

Duration of Program
Academic year

Average Number of Participants
207 per year

Grade Level of Participants
Grades 10 to 12

Objectives
King/Drew Medical Magnet High School is a small magnet school in the Los Angeles Unified School District. Its purpose is to provide minority high school students with enriched learning activities in a health care setting.

Content
King/Drew Medical Magnet Program is a high school experiment that involves our partners and community health care facilities. This partnership has provided exposure to health care for each student during several rotations each year. In addition, professors in scientific research at Charles Drew University, University of California at Los Angeles, California State Universities at Los Angeles and Dominguez Hills serve as mentors for these students. The most striking part of the curriculum is its work-based learning program that the hospital research program provides one day each week for all students. There are currently over 90 sites available for student assignments. Teachers assigned to work with hospital supervisors help monitor the students and assist in developing learning activities.

Evaluation
Since its first graduating class in 1985, many students have entered colleges in the sciences, health professions, and the military with health care training as their main focus. Evaluation of past graduates is currently being done by graduate students at the University of California at Los Angeles under the auspices of the California State Department of Education.

Bravo Medical Magnet High School
MAG-CA-03

Director
Rosa Hernandez, Ed.D.
Renetta A. Jenkins (Coordinator)

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Bravo Medical Magnet High School
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Los Angeles, CA 90033
Tel: 213-342-0428
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Institutional Sponsor
Francisco Bravo Magnet Medical High School

Institutional Partner
University of Southern California
School of Medicine

Year Begun
1991

Duration of Program
Year round

Average Number of Participants
1,000 per year

Grade Level of Participants
Grades 9 to 12

Objectives
To develop and apply innovative approaches to the teaching of science, increase student readiness and motivation for biomedical research and health science careers, and promote awareness of biomedical research.

Content
The program features a wide variety of health-related enrichment courses and activities. Students get the opportunity to work in research laboratories or hospitals, attend research seminars, join special interest clubs, participate in science field trips, science and health fairs, and a student bioscience newsletter. Tutoring in science and math is available. The program has a high school teacher component which engages them in professional development. These teachers get an opportunity to work in a research laboratory, attend research seminars, and participate in computer and biomedical science workshops.

Evaluation
Evaluation includes the four areas of needs assessment and baseline data collection, formative assessment of the individual innovations and faculty development efforts, documentation of planned activities, and summative assessment of project impact.

Van Nuys High School Medical Careers Center
MAG-CA-04

Director
Joan C. Mills

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Van Nuys High School
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Van Nuys, CA 91411
Tel: 818-781-2371 ext. 271
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Institutional Sponsor
Van Nuys High School

Institutional Partners
Los Angeles Unified School District,
Northridge Hospital (West & East Campus)

Year Begun
1992

Duration of Program
Academic year

Average Number of Participants
240 per year

Grade Level of Participants
Grades 9 to 12

Objectives
To acquaint students with the medical field and to expose them to all aspects of the health care industry.

Content
This magnet program, in conjunction with Northridge Hospital, offers a challenging program for students interested in highly academic course work and hands-on experiences. Students spend two hours a day at the hospital site and do weekly field work, take advanced placement and honors classes, and attend laboratories and clinical assignments.

Evaluation
Ninety-eight percent of the first graduating class were accepted to four-year colleges and universities.

Drew University Precollege Research Partnership Program
NIH-CA-04

Director
Samuel J. Shacks, Ph.D., M.D.

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of Medicine & Science
Research Training Institute
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Los Angeles, CA 90059
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Fax: 213-563-5905

Institutional Sponsor
Charles R. Drew University
of Medicine & Science

Institutional Partner
None

Year Begun
1985

Duration of Program
8 weeks during summer

Average Number of Participants
15 per year

Grade Level of Participants
Rising high school juniors & seniors

Objectives
To provide a precollege health science education program aimed at increasing the number of minority high school students who are interested and academically prepared to pursue careers in biomedical research and the health professions.

Content
The program activities include course offerings in biology, chemistry, computer training, and learning style performances conducted by a team of teachers who are tenured in an urban teaching environment. Students are assigned to a research mentor/scientist who works closely with the students and provides them with hands-on experiences in laboratory sciences. Weekly seminars on biomedical and biobehavioral topics are presented by visiting and campus scientists.

Evaluation
Since its inception, 107 students have participated in the program. Of these, 42 enrolled in college, 10 graduated with a bachelor's degree, four entered medical school, and 17 are in degree programs with health science majors. Three have enrolled in a health-related program while 16 are still in high school.

Science Education Partnership Summer Internship Program
NIH-CA-07

Directors
Helen J. Doyle, Ph.D.
Tracy Stevens, Ph.D.

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Science & Health Education Partnership
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Fax: 415-476-9926

Institutional Sponsor
University of California-San Francisco

Institutional Partner
San Francisco Unified School District

Year Begun
1988

Duration of Program
9 to 10 weeks during summer

Average Number of Participants
10 to 15 per year

Grade Level of Participants
Incoming high school seniors

Objectives
The program provides economically-disadvantaged or underrepresented minority students with experience in science or health-related research projects. It aims to increase their understanding of science and the process of scientific investigation and gives them experience in communicating about their work. It provides information on education and career options in science and health and helps them make informed college and career choices.

Content
The program is for students from the San Francisco Unified School District who have demonstrated strong academic potential and a great interest in science. Participants spend most of their time during the summer working with mentors on research projects at the University of California-San Francisco. Weekly meetings provide a forum for a variety of learning experiences. Students tour each others' laboratories and attend lectures on graduate education in science and medicine or about specific research topics. At the end of the program, they make brief presentations to the other participants. They also keep journals on their lab experiences.

Evaluation
N/A

Minority High School Student Research Apprentice Program
NIH-CO-03

Director
Charles W. Miller, Ph.D.

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Colorado State University
Department of Physiology
Fort Collins, CO 80523
Tel: 970-491-7842
Fax: 970-491-7569

Institutional Sponsor
Colorado State University

Institutional Partner
None

Year Begun
1970

Duration of Program
6 weeks during summer

Average Number of Participants
17 students, 5 teachers per year

Grade Level of Participants
Grades 10 to 12

Objectives
To encourage students to pursue careers in biomedical research.

Content
The program accepts primarily Colorado residents although approximately 20 percent will be from out of state. Students are selected on the basis of their academic achievement in science courses, interests in science, teachers' recommendations, and the applications. They are assigned to a laboratory where they participate in research projects. They are provided with a two-day laboratory orientation course where they review a variety of techniques useful in research laboratories. Seminars on careers, college admissions, financial aid, honors programs, and essentials of preparing a scientific talk and paper are provided. Students submit a 10-page research paper and deliver an oral presentation to their peers and mentors.

Evaluation
All students enrolled in college and many pursued science or related majors. Approximately 20 percent of the students are involved in health or science-related careers. Tracking of students is updated every two years.

Precollege Enrichment Program
ENR-CT-01

Director
Marja M. Hurley, M.D.
Boake L. Plessy, Ph.D. (Co-Director)

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Institutional Sponsor
University of Connecticut Health Center

Institutional Partner
None

Year Begun
1986

Duration of Program
6 weeks during summer

Average Number of Participants
25 per year

Grade Level of Participants
Incoming high school seniors & college freshmen

Objectives
The preprofessional training program is designed to provide sound development of scientific, mathematical, communications, problem-solving, and test-taking skills. The purpose is to enhance the chances for high school seniors to gain admission to preprofessional undergraduate programs and to increase the retention of participants already admitted to these programs.

Content
The program consists of two concurrent eight-week sections, each containing 27 hours per week of formal lecture, laboratory, and directed study. One section consists of courses in inorganic chemistry, English, reading, calculus, or pre-calculus. The other section offers courses in biology, organic/biochemistry, physics, and calculus. A study skills course focusing on problem-solving and test-taking is also offered.

Evaluation
A total of 143 students have participated in this program. Data on 109 students (76 percent) shows that 71 percent have entered college. Twenty applied to medical school, of which 12 matriculated. One is in dental school and two are attending other graduate or professional schools.

Minority High School Student Research Apprentice Program
NIH-CT-01

Director
Shafali Lal
Donna DuPree (Coordinator)

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Office of Multicultural Affairs
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New Haven, CT 06520-8036
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Fax: 203-785-7208

Institutional Sponsor
Yale University School of Medicine

Institutional Partner
None

Year Begun
1980

Duration of Program
8 weeks during summer

Average Number of Participants
15 students, 2 teachers per year

Grade Level of Participants
Incoming high school seniors

Objectives
To stimulate among minority high school students an interest in pursuing careers in biomedical research and the health professions.

Content
The program is for New Haven area underrepresented minority high school students who have demonstrated academic excellence in the sciences. The program gives them an opportunity to work in research laboratories under the guidance of doctors, scientists, and researchers at Yale University School of Medicine.

Evaluation
Of the 13 students participating in this year's program, all have indicated they will start college application for matriculation by the fall. Sixty percent have indicated an interest in pursuing a degree in the health professions while the remaining students expressed interest in engineering, business, and law enforcement.

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Minority High School Student Research Apprentice Program
NIH-CT-02

Director
Marja M. Hurley, M.D.
Boake L. Plessy, Ph.D. (Co-Director)

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Tel: 860-679-3483
Fax: 860-679-1875

Institutional Sponsor
University of Connecticut Health Center

Institutional Partner
None

Year Begun
1983

Duration of Program
8 weeks during summer

Average Number of Participants
12 per year

Grade Level of Participants
Incoming high school juniors & seniors

Objectives
To provide minority high school students with a meaningful experience in various aspects of health-related research in order to stimulate their interest in science careers.

Content
This program provides students with a research experience in one of the basic science or clinical laboratories at the University of Connecticut Health Center or the Veterans Administration Hospital at Newington. Students report the results of their research in a presentation before faculty, preceptors, other program participants, and invited guests at the end of the program.

Evaluation
Over the past 11 years, 89 high school students have been trained in the laboratories at the schools of medicine and dental medicine. We have been able to track 81 percent or 72 students. Our data shows that 76 percent have entered college. Four students have matriculated into medical school and three are in other graduate or professional schools.

Eastern Health & Human Services Academy
MAG-DC-01

Director
Flossie M. Johnson

Address
Eastern High School
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Washington, DC 20003
Tel: 202-724-8737
Fax: 202-724-8744

Institutional Sponsor
Eastern High School

Institutional Partners
D.C. Public Schools, U.S. Department of Health and Human Services, Private Industries

Year Begun
1991

Duration of Program
Year round (4 years)

Average Number of Participants
130 per year

Grade Level of Participants
Grades 9 to 12

Objectives
The Eastern Health and Human Services Academy is a special high school program that prepares its participants to have a sound college preparatory education so they can succeed in the health and human services-related professions.

Content
The Academy is a comprehensive high school which offers a variety of courses and academic programs designed to ensure a well-balanced curriculum. The curriculum includes courses in advanced math and science, English, SAT Prep, foreign languages, keyboard and computer applications, and health and human services-related courses. Other activities include paid summer internships, field trips, guest lectures, community involvement, and opportunities to work in a variety of health care settings.

Evaluation
N/A

Minority Student Research Apprenticeship Program
NIH-DC-01

Director
Joy Phinizy Williams

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Georgetown University School of Medicine
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Washington, DC 20007
Tel: 202-687-1406
Fax: 202-687-7660

Institutional Sponsor
Georgetown University School of Medicine

Institutional Partner
None

Year Begun
1981

Duration of Program
8 weeks during summer

Average Number of Participants
12 students, 2 teachers per year

Grade Level of Participants
High school juniors (at least 16 years old)

Objectives
To introduce students to biomedical research.

Content
The program is for District of Columbia residents only. Students must demonstrate an interest and aptitude for science and math and be recommended by a science or math teacher. Participants are assigned to laboratories of senior investigators where they participate in ongoing research projects. Weekly seminars give the students additional opportunities to learn about various aspects of biomedical science, research careers, and opportunities for science education and training. Students write and submit a paper based on their research. They also give an oral presentation which is evaluated by their peers and mentors.

Evaluation
Since 1981, all participants have enrolled in college with a majority choosing science or related majors. At least 15 percent of the program participants are either in graduate or medical school or practicing in a health or science profession.

Minority Student Research Apprenticeship Program
NIH-DC-03

Director
Roland M. Nardone, Ph.D.

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Catholic University of America
The Discovery Center
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Washington, DC 20064
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Fax: 202-319-4467

Institutional Sponsor
Catholic University of America

Institutional Partner
None

Year Begun
1992

Duration of Program
Year round (academic year & summer components)

Average Number of Participants
30 per year
(20 during academic year & 10 during summer)

Grade Level of Participants
Grades 9 to 12

Objectives
To stimulate minority high school students to pursue careers in medicine or biomedical research by providing them with the facilities and guidance to successfully complete individual research projects. The summer component consists of internships in both a classroom and lab setting at NIH and allows students to gain more valuable and varied experience.

Content
During the academic year, students get an opportunity to design and execute their research projects after school and on weekends in the "*What If?*" Research Laboratory at the Discovery Center for Cell and Molecular Biology. The Discovery Center provides guidance, technical support, equipment, and a forum for reporting their findings. During summer 10 students are selected to participate in the eight-week student research internships. Students spend three weeks in a classroom or laboratory where they gain biomedical research technology experience. They are then assigned to a research mentor at the NIH where they spend five weeks working in a research laboratory.

Evaluation
Eighty-two research projects have been performed in the "*What If?*" Research Laboratory. Several students have achieved high honors at local and state science fairs. Five participants have matriculated into prestigious universities and are pursuing science or science-related studies.

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Academy of Health Professions-Hillsborough County Schools
MAG-FL-01

Director
David N. Smith

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Academy of Health Professions
Tampa Technical High School
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Tampa, FL 33610
Tel: 813-744-8360 ext. 43
Fax: 813-744-8381

Institutional Sponsors
Hillsborough County Schools

Institutional Partner
Hillsborough Education Foundation

Year Begun
1991

Duration of Program
Academic year

Average Number of Participants
130 per class (total of 520)

Grade Level of Participants
Grades 9 to 12
(80 percent college prep & 20 percent tech prep)

Objectives
The Academy of Health Professions provides a specialized program to prepare students for a wide range of health care careers. All Academy students will be able to articulate with two- and four-year institutions of higher learning. Each Academy graduate will be prepared in specific medical areas and may choose to work in entry-level medical positions while pursuing higher education.

Content
Programs in health-related fields such as dental lab technology, prenursing, premedicine, predentistry, physical therapy assisting, occupational therapy assisting, vision care assisting, preveterinary medicine, and medical laboratory are offered.

Evaluation
Outstanding academic performance is measured by the ACT and SAT scores, as well as the number of college credits our students receive through dual enrollment and advanced placement courses. Student acceptance at institutions of higher learning with substantial competitive financial aid is another evaluation criterion.

Medical & Allied Health Professions Magnet Program
MAG-FL-02

Director
Adrienne Weinstein Lowy

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Miami Northwestern Senior High School
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Miami, FL 33510
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Fax: 305-691-4955

Institutional Sponsor
Miami Northwestern Senior High School

Institutional Partners
University of Miami (UM),
Dade County School System

Year Begun
1992

Duration of Program
Year round

Average Number of Participants
330 per year

Grade Level of Participants
Grades 9 to 12

Objectives
This program offers students an in-depth study of medicine, science, and the health care field by providing field experiences and internships in modern medical facilities. The goal is to develop specific career-related skills and encourage students to pursue health professions.

Content
The core curriculum offers ninth graders a sequence of courses in communication, interpersonal relations, career development, legal and ethical aspects, emergency medical, and computer literacy skills. Through the University of Miami partnership, these students get a six-week immersion in medical and biological sciences. Students attend two classes daily and receive credit in health and physical education. During the tenth grade, students continue to take medical and allied health classes in the laboratory. During summer, these students learn about hospital operations and management at Jackson Memorial Hospital, a UM affiliated training institution. In the eleventh and twelfth grades, students may choose to do an internship in a specific health field. They also get a six-week laboratory immersion in biomedical engineering, computer science, and electronic technology as applied to medical activities. These students are taught by UM faculty and receive one full credit in integrated science. Besides summer research and exploration at the site facilities in UM, the institution also provides meeting space for students to learn about the health care delivery system, bioethnics, communication skills, and public health issues.

Evaluation
N/A

Summer Educational Enrichment Program (SEEP) in the Health Sciences: A High School Honors Program
ENR-GA-01

Director
Rosie Allen-Noble, Ed.D.

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School of Medicine
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Institutional Sponsor
Medical College of Georgia
School of Medicine

Institutional Partner
None

Year Begun
1970

Duration of Program
8 weeks during summer

Average Number of Participants
20 per year

Grade Level of Participants
Incoming high school seniors

Objectives
To enrich students' knowledge of biomedical sciences, familiarize them with educational opportunities at Medical College of Georgia, help them identify their specific career goals, and enhance their prospects for admission to health professional schools.

Content
The program is for students in Georgia who have demonstrated academic excellence. The program features college-level courses in biology, medical writing, analytical reading, and workshops on learning skills and test-taking strategies.

Evaluation
Since the inception of the SEEP programs, 314 high school students and 781 college students have participated. Follow-up data show that 99 percent of the high school students have matriculated to college and 71 percent of those graduated in four years. About 48 percent of the high school participants chose health professional careers while 30 percent chose medicine. Seventy-seven percent of the college student participants pursued health science-related careers. Approximately 36 percent of them went on to attend medical school.

Minority Initiative Program for K-12 Teachers & High School Students
NIH-GA-02

Director
Rosie Allen-Noble, Ed.D.

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Institutional Sponsor
Medical College of Georgia
School of Medicine

Institutional Partner
None

Year Begun
1981

Duration of Program
8 weeks during summer

Average Number of Participants
8 per year

Grade Level of Participants
High school graduates

Objectives
To provide minority high school students and teachers with a meaningful experience in various aspects of health-related research and to stimulate their interest in careers in sciences.

Content
Research experience is provided for talented students in transition from high school to college. This summer program enables them to learn and practice modern laboratory techniques as they study new research concepts. Research experience also is available for high school science teachers where they learn new research and laboratory techniques that can be used in their classrooms to enhance student knowledge and inspire interest in bio-medical sciences.

Evaluation
From 1981-1993, 55 students have participated in this program. All program participants have gone on to college. Of those who have earned undergraduate degrees, about 64 percent have chosen medical or research-related careers (*The NIH Record*, March 16, 1993).

Summer Program for the Enhancement of Basic Education: Medical Science (SPEBE)
ENR-HI-01

Director
Iwalani R. N. Else

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John A. Burns School of Medicine
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Institutional Sponsor
University of Hawaii
John A. Burns School of Medicine

Institutional Partner
State of Hawaii Department of Education

Year Begun
1992

Duration of Program
6 weeks during summer

Average Number of Participants
30 per year

Grade Level of Participants
Incoming high school seniors

Objectives
To introduce students to the field of medical science through simulation of first-year medical school.

Content
Students discuss contemporary health and social issues such as motor vehicle accidents, asthma, lupus, STDs, diabetes, and nutrition. They participate in small group tutorials, laboratories, excursions, and lectures.

Evaluation
All participants have gone on to college. Approximately 89 percent of these students are pursuing health careers.

Chicago Area Health & Medical Career Precollege Programs
ENR-IL-02

Director
Pamela D. Cratic

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(CAHMCP)
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Institutional Sponsor
Illinois Institute of Technology

Institutional Partners
Illinois Board of Higher Education, University of Health Sciences Chicago Medical School, University of Chicago Pritzker School of Medicine, Northwestern University Medical School, Loyola University of Chicago Stritch School of Medicine, University of Illinois College of Medicine, Rush Medical College, Chicago College of Osteopathic Medicine

Year Begun
1979

Duration of Program
5 to 8 weeks during summer

Average Number of Participants
120 per year

Grade Level of Participants
Grades 10 to 12

Objectives
To provide an innovative curriculum which will encourage underrepresented minority students to consider and pursue medical and health professions. More specifically, the program is designed to improve students' performance on standardized aptitude/achievement test, enhance their entry into colleges and universities, strengthen their academic background in the basic sciences and math, foster their analytical and conceptual thinking skills, provide exposure to scientific instruments that will be encountered at the collegiate level, and expose them to various medical school or hospital settings so they can gain an insight on health and medical careers.

Content
There are three precollege components in the CAHMCP Precollege Program. In the Sophomore Component, students participate for four days a week in the SAT Plus Prep courses by Stanley Kaplan Test Centers and Testwatch Institute in accordance with CAHMCP's specifications. The Pre-senior Component is for juniors who enroll in a college-level math or science course offered at a four-year college or university. Each student's course assignment is determined by performance on a standard math placement instrument administered by the receiving undergraduate school. The course offers four semester hours of transferrable college credit. Both components offer added enrichment by allowing students to enroll in a biology research project or a chemistry workshop.

Chicago Area Health & Medical Career Precollege Programs
ENR-IL-02

Content (Cont'd)
They also attend workshops on communication skills, college admissions counseling, and college financial aid. The third component known as the Prematriculation Program (Preceptorship 1) is for graduating seniors who take courses in math and science for college credit. Workshops on study and communications skills are also offered. Those who successfully complete the course work receive a small stipend. Free tutoring, not limited to math and science, is available during the academic year. A CAHMCP-sponsored tour of historically black colleges during the Chicago Public School spring break also is available.

Evaluation
The typical CAHMCP student today scores approximately 20 percent better on the SAT and ACT than their non-CAHMCP counterparts. CAHMCP high school graduates often matriculate into colleges with substantial merit-based financial aid packages. About 60 percent of the participants in the Precollege Programs continue in our Preceptorship Program. Generally, these students go on to earn their undergraduate degrees in the health professions or other career-related fields. A majority of them will go on to receive graduate degrees in the health sciences. A significant proportion of remaining students obtain a J.D. specializing in health, environmental law, and other related disciplines.

Health Science Career Pathway Program
ENR-IL-03

Director
Kathleen A. Jones

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Institutional Sponsor
Southern Illinois University School of Medicine

Institutional Partners
Saint Joseph Memorial Hospital,
House Calls Home Health Agency,
Jackson County Nursing Home,
Veterans Administration Medical Center,
Quality of Life/Home Health Agency

Year Begun
1996

Duration of Program
4 weeks during summer

Average Number of Participants
20 to 25 per year

Grade Level of Participants
Grades 10 to 12

Objectives
To introduce underrepresented high school students to health professions, science and math, and encourage them to pursue such professions. A primary goal is to contribute to the development of a strong core of health professionals and researchers for the future.

Content
Students are given hands-on experiences ranging from laboratory experiences to shadowing experiences at various local health care facilities. Some of the subjects they get to experience include electron microscopy, chemistry, physiology, microbiology, and hands-on math. A learning skills course is available to students to help them succeed in high school and college. Visits to universities and field trips to the zoo and botanical gardens are also organized.

Evaluation
N/A

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Biochemistry Minority Student Research Apprentice Program
NIH-IL-03

Director
Warren Knudson, Ph.D.

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Department of Biochemistry
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Chicago, IL 60612-3864
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Institutional Sponsor
Rush Medical College
Department of Biochemistry

Institutional Partner
None

Year Begun
1986

Duration of Program
8 weeks during summer

Average Number of Participants
9 students, 1 teacher per year

Grade Level of Participants
Incoming high school seniors

Objectives
To familiarize students to the life of working scientists and physicians in biomedical research, help identify their career goals, and provide exposure and training in modern research techniques in a medical center environment.

Content
Students are selected based on their interest in science or health-related professions and recommendations from their high school science teachers. Each student is placed under the supervision of a faculty member in the Biochemistry Department and participates in ongoing research projects in the faculty's laboratory. Weekly meetings on laboratory safety, care and use of animals in research, career choices, and education/training requirements in the biomedical field are also held.

Evaluation
Responses from students and especially teachers to the program have been excellent. Several students have won highest awards in local, regional, and international science fairs. Many participants have entered college with full scholarships.

Minority High School Student Research Apprentice Program
NIH-IL-04

Director
Jorge A. Girotti, Ph.D.
Mary H. Parrott, M.A. (Coordinator)

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Institutional Sponsor
University of Illinois at Chicago
College of Medicine

Institutional Partner
None

Year Begun
1982

Duration of Program
8 weeks during summer

Average Number of Participants
15 per year

Grade Level of Participants
High school juniors & seniors

Objectives
To provide exposure and experiences in research laboratories for minority high school students and to stimulate them to pursue careers in biomedical research and the health professions.

Content
Students are placed in research laboratories of faculty investigators whose interests range from basic molecular biology to patient-related clinical research. Acting as mentors, investigators provide hands-on experiences to students in the scientific method, hypothesis formation, scientific ethics, and the methodology of laboratory research. Students also attend college-sponsored scientific meetings. At the end of the program, they present their research at a seminar. Other enrichment activities include visits to the undergraduate colleges, health professions colleges, workshops on admission, financial aid, scholarships, and campus life. During these activities, students are accompanied by graduate students from the college who also act as their role models.

Evaluation
An evaluation done in 1991 showed that a total of 49 students had participated in the program. Tracking revealed that 19 students were still in high school, 10 were enrolled in college, three were in medicine, two had received doctorate degrees in pathology and pharmacology, one was employed in a health-related profession, and two were working in the private nonhealth related professions. Since 1991, an additional 48 students participated in this program, which brings the total of apprentices to 97. Currently, tracking of previous participants is underway.

Minority Initiative for Research Careers (MIRC)
NIH-IL-06

Director
Kathleen A. Knafl, Ph.D.
Priscilla Travis (Coordinator)

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College of Nursing
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Institutional Sponsor
University of Illinois at Chicago
College of Nursing

Institutional Partner
None

Year Begun
1985

Duration of Program
6 to 8 weeks during summer

Average Number of Participants
10 students, 2 to 3 teachers per year

Grade Level of Participants
High school juniors & seniors

Objectives
To give underrepresented minority high school students who are interested and academically prepared to pursue careers in nursing, other health professions, and science.

Content
The main component is to provide structured research experiences under the direction of active nurse researchers for both students and high school teachers. Students work closely with faculty at the University of Illinois on various research projects which may involve either biological or psycho-social research. In addition, both students and teachers participate in a weekly seminar where they discuss their ongoing research experiences. Other activities include computer training, library skills development, and how to deal with issues involved in research with human and animal subjects.

Evaluation
Over 80 percent of our participants indicated their intent to pursue careers in health-related fields after their MIRC experience.

NCRR Minority Initiative: K-12 Teachers & High School Students NIH-IL-08

Director
Paul Henry, Ph.D.

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Institutional Sponsor
Southern Illinois University at Carbondale
School of Medicine

Institutional Partner
Southern Illinois University at Carbondale
College of Science

Year Begun
1990

Duration of Program
8 weeks during summer

Average Number of Participants
10 per year

Grade Level of Participants
Grades 10 to 12

Objectives
To provide structured summer science research experiences which are personalized and hands-on for both teachers and minority high school students.

Content
Students and teachers work with a biomedical or behavioral researcher in an active research laboratory for six hours per day during the program. While laboratory experiences vary, each student receives a hands-on, mentored experience with attainable goals. Teachers get a chance to do laboratory research and are exposed to contemporary concepts in the health sciences.

Evaluation
Evaluation methods are designed to obtain both formative and summative information. Formative data are obtained through discussions with participants and program mentors. This feedback will facilitate program changes, if needed.

Minority High School Student Research Apprentice Program
LAB-IN-01

Director
Fred L. Ficklin, Ed.D.

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Institutional Sponsor
Indiana University School of Medicine

Institutional Partner
None

Year Begun
1982

Duration of Program
8 weeks during summer

Average Number of Participants
10 per year

Grade Level of Participants
Incoming high school seniors

Objectives
To enrich students' knowledge of biomedical sciences, familiarize them with educational opportunities at Indiana University School of Medicine, help them identify their specific career goals, and enhance their prospects for admission to health professional schools.

Content
The program is for students who have demonstrated academic excellence. The program features laboratory and clinical work experiences in both basic and clinical sciences with instruction in library usage. Seminars on use of animals, ethics, and research protocol also are included. Students are required to make a verbal and poster presentation on their research activity at the end of the program.

Evaluation
N/A

Central High School Magnet Career Academy
MAG-KY-01

Director
Harold E. Fenderson
Brenda B. Schmidt (Coordinator)

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Central High School Magnet Career Academy
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Louisville, KY 40203
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Institutional Sponsor
Central High School

Institutional Partners
University of Kentucky School of Pharmacy, University of Louisville, Sullivan College, Jefferson Community College, Spalding University

Year Begun
1990

Duration of Program
Year round

Average Number of Participants
650 per year

Grade Level of Participants
Grades 9 to 12

Objectives
To provide a four-year, precollege curriculum for students through career exploration and study. The medical area includes three years of in-depth study, training, and work experience in medicine, allied health, nursing, dentistry, diagnostics, clinical lab science, medical office administration, veterinary science, and therapeutic/pharmacy.

Content
Central High School Magnet Career Academy offers a unique program that uses the resources of Louisville's central business, government, and medical districts to supplement the teaching-and-learning process for academically gifted students in the Advanced, Honors, and Comprehensive programs. Each of the 11 magnet areas is designed to prepare students for college or other post-secondary education while introducing them to career possibilities. The summer component involves high school students in health professions preparation and exposes them to the health sciences program at the University of Louisville.

Evaluation
Central is a participant in the CPMSA project funded by the National Science Foundation. This project aims to expose teachers to new strategies and teaching methods, to provide community leaders who are positive minority role models, and to utilize community resources to enrich school curriculum and provide students with connections during the learning process.

Minority Initiative: Teachers & High School Students Program
NIH-KY-01

Director
Donald T. Frazier, Ph.D.
Pat Trotter (Coordinator)

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Fax: 606-257-1925

Institutional Sponsor
University of Kentucky Medical Center

Institutional Partner
None

Year Begun
1982

Duration of Program
8 weeks during summer

Average Number of Participants
14 per year

Grade Level of Participants
High school juniors and seniors

Objectives
To provide opportunities for Central Kentucky minority high school students to work under the direction of a scientist in a laboratory at the Chandler Medical Center.

Content
The program also provides a research experience for two K-12 teachers who must either be members of a minority group or teach a significant number of minority students. The internship includes opportunities to participate in both clinical and bench research, visit various medical facilities, and utilize the resources at the Chandler Medical Center. Both students and teachers forge new friendships with preceptors, laboratory assistants, and each other. They will present a summary of their summer experience at the end of the program. Students are selected based on their transcripts, essays, and teachers' recommendations.

Evaluation
N/A

Preliminary Education Program (PEP)
ENR-MD-01

Directors
Denise M. Harmening, Ph.D.
Willie Q. Cartwright, M.S.

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Institutional Sponsor
University of Maryland School of Medicine

Institutional Partners
University of Maryland at Baltimore Dental School, University of Maryland Medical Systems, Baltimore City Public Schools

Year Begun
1993

Duration of Program
6 weeks during summer

Average Number of Participants
30 per year

Grade Level of Participants
Recent high school graduates

Objectives
To enroll students from disadvantaged backgrounds who are interested in allied health professions, particularly medical technology and dental hygiene. The overall goal is to increase the number and percentage of minorities employed in allied health professions.

Content
Academic enrichment courses on college algebra, chemistry, biology, and English are some of the courses offered by the PEP. Sessions on financial aid, scholarships, academic counseling, learning skills and strategies, college survival skills, health career information, and computer applications are also provided. Students get a chance to participate in "shadowing" experiences with practicing professionals as part of their exposure to medical technology and dental hygiene. As part of the library skills development, participants get to conduct a scientific literature search and write a review paper on the topic of their choice.

Evaluation
The program will be evaluated by the knowledge and skills gained by the participants as assessed by pre- and post-surveys, interest in and commitment to pursue preprofessional curricula in medical technology and dental hygiene, and successful completion of a first-year preprofessional curriculum. Participants will be individually evaluated based on their interests shown, participation, motivation, demonstrated skills and abilities, and development and commitment to career goals.

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Hopkins Dunbar Health Professions Program
MAG-MD-01

Director
Dwight Lassiter

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Institutional Sponsor
Paul Laurence Dunbar High School

Institutional Partners
Johns Hopkins University,
Johns Hopkins School of Medicine & Medical Center,
Baltimore City Public Schools,
Coppin State University,
Morgan State University

Year Begun
1982

Duration of Program
Year round

Average Number of Participants
150 per year

Grade Level of Participants
Grades 9 to 12

Objectives

The Hopkins Dunbar Program (HDP) is a magnet preprofessional health sciences high school program housed in Dunbar High School. It identifies, recruits, and selects students for health careers by providing them with an instructional program designed to improve basic knowledge acquisition, intellectual habits, and preprofessional exposure. It educates students, parents, and the community to what academic preparation for work and further education really means in terms of rights and responsibilities.

Content

The HDP offers an advanced college prep curriculum where students take honors courses in math, science, English, health, social studies, and foreign languages. They have access to a computer lab, state-of-the-art science equipment, a simulated hospital room, doctor's office, and dental office. They also participate in internships at Johns Hopkins Medical Center laboratories and clinical facilities.

Evaluation

Approximately three-fourths of all students complete the course of studies and nearly all of those who drop out of the HDP graduate from high school. In 1991, all HDP graduates were admitted to four-year colleges and 75 percent matriculated in the fall following graduation. Of those who did not enroll immediately, most were delayed because of finances. An outside evaluation of the program found that standardized test scores and college enrollment rates of program participants far exceeded rates for a matched sample of high ability students from other Baltimore City schools and high ability Black students nationally.

Minority High School Student Research Apprenticeship Program
NIH-MD-01

Director
Norbert R. Myslinski, Ph.D.

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Institutional Sponsor
University of Maryland Baltimore
College of Dental Surgery

Institutional Partner
City of Baltimore Commonwealth Project

Year Begun
1988

Duration of Program
8 weeks during summer

Average Number of Participants
20 students, 3 teachers per year

Grade Level of Participants
Grades 9 to 12

Objectives
To stimulate among minority high school students an interest in pursuing careers in biomedical research and health professions by exposing them to research and scientific techniques.

Content
This program provides participants with summer jobs, mentoring, laboratory training, and exposure to a scientific environment. In addition to lab work and job duties, the students participate in weekly oral presentations, abstract assignments, CPR classes, career seminars, and science-related lectures.

Evaluation
Students' feedback about the program and its components is evaluated at the end of the apprenticeship. Ninety-nine percent have rated the program on a scale as average or better. Many of the participants have entered and excelled in the science programs at leading colleges and universities.

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Brighton High School of Health Professions
MAG-MA-01

Director
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Institutional Sponsors
Boston Public Schools

Institutional Partners
Boston University,
St. Elizabeth's Medical Center,
New England Medical Center,
Boston City Hospital,
New England Baptist Hospital,
Beth Israel Hospital,
Brighton Marine Public Health Center,
Greenery Rehabilitation Center

Year Begun
1991

Duration of Program
Academic year

Average Number of Participants
200 per year

Grade Level of Participants
Grades 9 to 12

Objectives
The School of Health Professions is a preprofessional magnet health sciences program housed in Brighton High School. This program provides students with a specialized academic curriculum, hands-on activities, and prepares them for college-level health careers or entry-level positions in a medical facility.

Content
Students are recruited on a city-wide basis. In the ninth and tenth grades, they enroll in an exploratory program where they familiarize themselves with a wide range of health careers. The program also offers college preparatory courses in the sciences and may include English for medical careers, math for science, anatomical illustration, foreign languages, bilingual courses, and hospital administration. Students get to participate in clinical rotations and internships with our medical facility partners. Other activities include field trips and guest speakers from medical and related fields.

Evaluation
Approximately 90 percent of all seniors complete the course of studies and go on to enter post-secondary institutions. Virtually all students continue in the School of Health Professions for the full four years. Those who do not continue postsecondary training usually obtain entry-level positions in medical facilities.

Minority High School Student Research Apprentice Program
NIH-MA-06

Director
Connie Phillips
Renee Montgomery (Coordinator)

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Boston, MA 02118
Tel: 617-541-5622/23
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Institutional Sponsor
Boston University School of Medicine

Institutional Partner
None

Year Begun
1991

Duration of Program
7 weeks during summer

Average Number of Participants
10 per year

Grade Level of Participants
Grades 11 to 12

Objectives
To stimulate among minority high school students an interest in pursuing careers in biomedical research and the health professions.

Content
These students are selected to work with Boston University Medical Center research faculty where they learn about research tools and techniques of modern biomedical laboratory. Seven weeks of summer research and interaction with students is the primary focus. Other activities include seminars and field trips to the Boston Museum of Science and local biotechnology companies.

Evaluation
N/A

Minority High School Outreach Program
ENR-MI-01

Director
Julia M. Simmons, M.S.
Marlene S. Chavis, A.D. (Coordinator)

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Wayne State University School of Medicine
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Detroit, MI 48201
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Institutional Sponsor
Wayne State University School of Medicine

Institutional Partner
Detroit Public School System

Year Begun
1970

Duration of Program
Year round

Average Number of Participants
500 per year

Grade Level of Participants
Grades 9 to 12

Objectives
To increase the number of high school graduates and help them succeed in college premedical programs. The program, designed to enhance their academic skills, seeks to advise, motivate, and encourage students to be interested in medicine or health science careers. The ultimate goal is to increase the number of underrepresented minority physicians.

Content
Meetings and visits are held at the various high schools throughout the city during the academic year. Topics such as study habits, time management, resume and interview preparation, scholarship and financial aid information, success formulas, advice on course selection, and college choices are addressed. Information about Wayne State University School of Medicine and its Minority High School Summer Skills Enrichment Program is also given.

Evaluation
Process and outcome evaluations of this outreach program are being conducted based on student attendance, GPA, graduation from high school, and college enrollment. We are currently evaluating the program outcome for the last five years.

NCRR Minority Initiative Program
NIH-MI-02

Director
Ricardo A. Brown, Ph.D.

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Department of Physiology
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Institutional Sponsor
Wayne State University School of Medicine

Institutional Partner
None

Year Begun
1985

Duration of Program
8 to 10 weeks during summer

Average Number of Participants
25 per year

Grade Level of Participants
Grades 9 to 12

Objectives
To stimulate among minority high school students an interest in pursuing careers in medicine, biomedical research and the health-related careers. Our primary goal is to help graduate high school seniors.

Content
Selection of students is based on scholastic aptitude, motivation and interest in science, prior accomplishments, transcripts, and recommendations from science teachers. Each student is assigned to work in the laboratory of an investigator who is involved in health-related research and committed to increase the student's understanding of research.

Evaluation
Virtually all of our program participants have entered or matriculated into university premedical and allied health programs.

Biomedical Research Internship Program
NIH-MS-02

Director
John S. Williamson, R.Ph., Ph.D.

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Website: http://www.olemiss.edu/depts/medicinal_chem/announce/SummerResearch.html

Institutional Sponsor
University of Mississippi School of Pharmacy

Institutional Partners
University of Mississippi Health-Related Professional Schools & Colleges

Year Begun
1988

Duration of Program
10 weeks during summer

Average Number of Participants
12 per year

Grade Level of Participants
Grades 9 to 12

Objectives
To provide minority high school students with a meaningful experience in various aspects of health-related research so as to stimulate their interest in careers in science.

Content
This program is held on the University of Mississippi at the Oxford Campus. Students are assigned to nationally-recognized research scientists/mentors from the University of Mississippi School of Pharmacy, the Research Institute of Pharmaceutical Sciences, or the National Center for the Development of Natural Products. They participate in hands-on research in medicinal chemistry, pharmaceuticals, pharmacognosy, pharmacology, and health care administration. Projects range from the isolation of bioactive materials collected from marine organisms to the chemical synthesis of computer-designed biopharmaceuticals. Students attend lectures, seminars, and tours of the research and clinical facilities at the University of Mississippi.

Evaluation
All program participants have successfully completed their high school education. More than 90 percent of the participants have enrolled in colleges and universities.

Minority High School Student Research Apprentice Program
NIH-MO-02

Directors
Michael Hosokawa, Ed.D.
Robert McCallum, Ph.D.
Jacqueline Cooper (Coordinator)

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Institutional Sponsor
University of Missouri-Columbia
School of Medicine

Institutional Partner
None

Year Begun
1981

Duration of Program
6 weeks during summer

Average Number of Participants
10 per year

Grade Level of Participants
Grades 10 to 11

Objectives
To offer a challenging, educational opportunity for academically talented minority and/or disadvantaged students who have demonstrated interest in and potential for careers in medicine and related fields.

Content
Each student is matched with a faculty mentor who facilitates interaction with staff, faculty, resident physicians, and students at the University of Missouri-Columbia Health Sciences Center. Participants are exposed to the center's research, teaching, and clinical environment. Seminars on college preparation, medical school life, curriculum, application process, academic requirements, financial assistance, and health sciences are offered. The curriculum also includes the study of math, English, reading and study skills, and preparation and presentation of a medical research paper.

Evaluation
To date, 123 students have participated in this program. Sixty are in four-year colleges, 38 are premedical students, six are science majors, and 25 are attending the University of Missouri-Columbia on full or partial academic scholarships.

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NCRR Minority Initiative: Student & Teacher Biomedical Research Internship NIH-MO-03

Director
Jeffrey Sich, Ph.D.

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Institutional Sponsor
Washington University School of Medicine

Institutional Partner
None

Year Begun
1981

Duration of Program
7 weeks during summer

Average Number of Participants
15 students, 3 to 5 teachers per year

Grade Level of Participants
Grades 10 to 11

Objectives
To introduce high school students to biomedical research and teaching.

Content
This program is for high school students and teachers in the St. Louis area. The students are selected based on an interest and aptitude in science, academic records, and science teachers' recommendations. Schools are encouraged to submit team applications composed of two students and a science teacher. Participants are assigned to research laboratories where they participate in ongoing research projects. They attend weekly research seminars as well as lectures on Gross Anatomy. At the end of the program, they give an oral presentation of their work to their peers, mentors, and family members.

Evaluation
All student participants eventually enroll in college. Most of them tend to choose a science major because of their experience in the program. Many have gone on to graduate programs and health professions fields.

Minority Research Program
NIH-MT-02

Director
Sara L. Young, Ed.D.

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Institutional Sponsor
Montana State University

Institutional Partners
USDA-ARS
EMPower

Year Begun
1980

Duration of Program
6 weeks during summer

Average Number of Participants
20 to 25 per year

Grade Level of Participants
Grades 10 to 12

Objectives
To give minority students a meaningful work-related experience in a scientific research laboratory.

Content
This program is to help students become interested in science, math, engineering, and technology. Students attend classes focused on writing, math, and computer skills, i.e., Internet and electronic mail. Courses on college preparation also are offered. They are assigned faculty mentors from the faculty staff who introduce them to research techniques and assist them in writing an abstract of their work. This work is then presented at a symposium at the end of the program.

Evaluation
To date, 196 students have participated in this program. Data through 1995 show that 90 percent of the 171 student participants have continued with their education.

Minority High School Scholars Program
ENR-NV-01

Director
Ann Diggins

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Reno, NV 89557
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Institutional Sponsor
University of Nevada School of Medicine

Institutional Partner
None

Year Begun
1993

Duration of Program
Year round

Average Number of Participants
15 per year

Grade Level of Participants
Incoming high school seniors

Objectives
To enrich the students' knowledge of opportunities in medicine and science, familiarize them with opportunities at University of Nevada School of Medicine, help them decide on career goals, and improve their chances of successfully applying to and entering college and pursuing a science major.

Content
This program gives minority students hands-on work experience in medical science laboratories. Activities include group laboratory research projects and experiments, library work and presentation, discussions with minority physicians and scientists, social activities with medical student mentors, campus life orientation, career planning guidance sessions, and exposure to the practice of medicine in clinical settings.

Evaluation
We are currently tracking students who have entered college.

Hispanic Center of Excellence
Summer Youth Program
ENR-NJ-01

Director
Maria L. Soto-Greene, M.D.

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UMDNJ New Jersey Medical School
Hispanic Center of Excellence
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Institutional Sponsor
UMDNJ New Jersey Medical School

Institutional Partner
None

Year Begun
1992

Duration of Program
8 weeks during summer

Average Number of Participants
20 per year

Grade Level of Participants
Grades 10 to 12

Objectives
To provide basic clinical exposure to high school students who have expressed interest in pursuing careers in medicine and teach them about diseases affecting the Hispanic community. The ultimate goal is to increase the nation's pool of Hispanic physicians.

Content
Participants must be motivated, in good standing academically, and have expressed interest in the field of science. Each student spends approximately 30 to 32 hours a week on campus. Student activities include participation in research projects, seminars on clinical medicine, field trips to colleges and universities, SAT review courses, academic enrichment lessons, lectures by guest speakers on illnesses affecting the Latino community, financial aid and college applications counseling, cultural diversity training, and basic life support certification.

Evaluation
As of this year, 94 students have participated in our program since it began in 1992. Of these, 62 are still in high school and 32 have gone on to college with most of them choosing a science major. Tracking of all students is updated annually.

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Explorations in Biomedical Sciences Program
ENR-NJ-02

Director
Ophelia Gona, Ph.D.

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Department of Anatomy
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Fax: 201-982-7489

Institutional Sponsor
UMDNJ New Jersey Medical School

Institutional Partner
None

Year Begun
1988

Duration of Program
5 weeks during summer

Average Number of Participants
100 per year

Grade Level of Participants
Grades 10 to 12

Objectives
To increase the interest of traditionally underrepresented minority high school students in the biomedical sciences, enhance their awareness of career opportunities in these fields, and strengthen their academic backgrounds.

Content
The Explorations Program has four components for each grade level. *Fantastic Voyage*, an interdisciplinary summer science camp for ninth graders, uses a discovery, hands-on approach to simulate the learning of science and math. *EnviroQuest* (grades 10 to 12) uses the mass media, science laboratory experiments, field trips, and discussion to enhance students' knowledge of environmental and political impacts upon health. *Mission: MEDICINE* offers high school juniors and seniors opportunities to learn about selected diseases and medical conditions through hospital experience, PBL sessions, seminars, and interviews with physicians. *Biomedical Research*, also restricted to grades 11 and 12, is a science apprentice program that gives highly motivated laboratory-oriented students a chance to explore the world of research as an active participation of a research team. Participants are selected based on academic performance, teachers' recommendations, extracurricular activities, interest in biomedical sciences, and future plans.

Evaluation
N/A

Minority High School Summer Research Apprentice Program
NIH-NJ-01

Director
Freda I. McClean

Address
Rutgers-The State University
Newark Campus
Precollege Education
175 University Avenue, Room 425
Newark, NJ 07102
Tel: 201-648-5416
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Institutional Sponsor
Rutgers-The State University
Newark Campus

Institutional Partner
None

Year Begun
1986

Duration of Program
6 weeks during summer

Average Number of Participants
8 to 10 students, 1 teacher per year

Grade Level of Participants
Grades 11 to 12

Objectives
To stimulate an interest in minority high school students to pursue careers in biomedical research and the health professions. A long-term objective is to establish year-round linkage among science teachers, elementary and secondary students, and biomedical researchers.

Content
This program is for students from the surrounding Essex County public high schools. They get involved in laboratory experiments and get to do research in biomedical sciences.

Evaluation
All of the students who participated in this program have gone on to college, and most have majored in biomedical fields.

Rutgers University Minority Apprentice Precollege Program
NIH-NJ-03

Director
Andrew B. Rudczynski, Ph.D.

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Rutgers-State University of New Jersey
Office of Research & Sponsored Programs
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Piscataway, NJ 08855-1179
E-mail: rudczynsk@gandalf rutgers.edu
Tel: 908-445-2884
Fax: 908-445-3257

Institutional Sponsor
Rutgers-State University of New Jersey
New Brunswick/Piscataway Campus

Institutional Partner
None

Year Begun
1980

Duration of Program
6 weeks during summer

Average Number of Participants
20 students, 4 teachers per year

Grade Level of Participants
Grades 9 to 12

Objectives
To motivate minority students to pursue careers in biomedical or behavioral research and health professions.

Content
Students are paired with Rutgers biomedical or behavioral research faculty members who serve as their mentors. They are provided with first-hand experience and work with a researcher in a laboratory on actual research experiments. Teachers work with the Rutgers faculty and get to use the resources of the university to develop a teaching unit, discovery-based lesson plans, visual aids, and a brochure. Both teachers and students participate in a library/computer research session and a research forum.

Evaluation
N/A

NCRR Minority Initiative: K-12 Teachers & High School Students NIH-NM-01

Director
JeanClare Seagrave, Ph.D.

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The Lovelace Institutes
(formerly Lovelace Medical Foundation)
2425 Ridgecrest SE
Albuquerque, NM 87108
Tel: 505-262-7560
Fax: 505-262-7043

Institutional Sponsor
The Lovelace Institutes
(formerly Lovelace Medical Foundation)

Institutional Partner
None

Year Begun
1987

Duration of Program
9 weeks during summer

Average Number of Participants
10 students, 2 teachers per year

Grade Level of Participants
Grades 10 to 12

Objectives
To stimulate the participants' interest in health science careers, provide them with hands-on laboratory experience, and improve their success in admission to, and matriculation from college and advanced programs.

Content
The participants are selected on the basis of academic excellence, recommendations of teachers, and interest in science careers. They are assigned to a working scientist mentor where they design and work on a project under his or her supervision. The lab experience emphasizes the scientific method, safety in the laboratory, and problem-solving skills.

Evaluation
Participants from the last four years who have now graduated from high school have gone on to college, including several prestigious institutions. They indicated that the lab experience was very positive and many have returned to work for their mentors in subsequent summers.

Science & Technology Entry Program (STEP)
ENR-NY-03

Director
Mildred J. Reynolds

Address
University of Rochester
School of Medicine & Dentistry
601 Elmwood Avenue, Box 601
Rochester, NY 14642
Tel: 716-275-2175
Fax: 716-273-1016

Institutional Sponsor
University of Rochester
School of Medicine & Dentistry

Institutional Partners
Associated Medical Schools of New York (AMS)

Year Begun
1986

Duration of Program
Academic year

Average Number of Participants
35 per year

Grade Level of Participants
Grades 8 to 12

Objectives
This program is part of a statewide initiative to increase the awareness and exposure of minority and economically-disadvantaged high school students to career opportunities in medicine and health professions.

Content
This program is open to students who are attending Greater Rochester high schools. During the school year participants are exposed to a biweekly hands-on research or clinical experience. Each student works with a preceptor who provides guidance and direction during the experience. They also receive tutoring from a high school science or math teacher. Pending availability of funding and support, the program is augmented by a four-week summer research component.

Evaluation
N/A

Science & Technology Entry Program (STEP)
ENR-NY-05

Director
Anthony A Clemendor, M.D.
Marva M. Richards (Coordinator)

Address
New York Medical College
Administration Building, Room 156
Valhalla, NY 10595
Tel: 914-993-4623
Fax: 914-993-4514

Institutional Sponsor
New York Medical College

Institutional Partner
None

Year Begun
1987

Duration of Program
Year round (28 weeks during the academic year & 4 weeks during summer)

Average Number of Participants
35 during academic year & 20 during summer

Grade Level of Participants
Grades 9 to 12

Objectives
This program is designed for minority and/or economically-disadvantaged students who are interested in scientific, technical, health or health-related careers. Besides helping students to explore the possibilities of health careers, STEP helps them to reinforce and enhance their basic academic and study skills, maintain a satisfactory academic performance, and increase their opportunities for acceptance into college.

Content
The program is held at the New York Medical College, Valhalla Campus. Subjects covered include math, chemistry, physiology, biology, reading and writing skills, standardized tests, and study techniques. Special emphasis is placed on hands-on exercises and activities which show a correlation between the concepts they study and actual professions in science and technology. Students are also counseled on financial aid and the college application process. Individual tutoring is also available. Medical school students at New York Medical College serve as their mentors. Students who are interested in exposure to a hospital setting get a chance to intern for 60 hours during the summer in the patient care areas of Westchester County Medical Center.

Evaluation
A recent survey of 217 participants shows that 65 are still in high school while 114 have been accepted into a four-year college. Of these, 19 chose premedicine, medicine, or health-related studies.

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Career STEP Program
ENR-NY-07

Director
Louise Squitieri, Ph.D.
Michael Cichon (Coordinator)

Address
Bronx Community College of
City University of New York
West 181 & University Avenue
Bronx, NY 10453
Tel: 718-220-6008
Fax: 718-220-6994

Institutional Sponsor
Bronx Community College of
City University of New York

Institutional Partners
New York State Education Department,
Citibank, Con Edison

Year Begun
1986

Duration of Program
Year round

Average Number of Participants
50 to 75 per year

Grade Level of Participants
Grades 10 to 12

Objectives
To increase the number of underrepresented minority students in math and science professions. The program is designed to improve math and science skills, increase the high school graduation rate, and encourage students to go on to colleges.

Content
This program offers an intensive curriculum in math, science, and science writing. Students have the chance to upgrade their skills and increase their academic preparation for college. Other activities include field trips, guest lectures, and career counseling.

Evaluation
Over 90 percent of our participants have improved their math skills, graduated from high school, and entered colleges.

State Precollege Enrichment Program (S-PREP)
ENR-NY-11

Director
Gerald E. Thomson, M.D.
Tiffany M. Simon, Ed.M. (Coordinator)

Address
Columbia University
College of Physicians & Surgeons
630 West 168th Street, Room 3-404
New York, NY 10039
Tel: 212-305-4157
Fax: 212-305-1343

Institutional Sponsor
Columbia University
College of Physicians & Surgeons

Institutional Partners
Associated Medical Schools of New York

Year Begun
1987

Duration of Program
Academic year

Average Number of Participants
75 per year

Grade Level of Participants
Grades 10 to 12

Objectives
To introduce students to a science and medical curriculum.

Content
This program is designed for minority New York City residents--Black, Hispanic, Native American, Alaskan Native, or those who meet the economically-disadvantaged guidelines. Students are selected based on their interest in science and math and recommendations from their teachers and guidance counselors. The participants get to select from classes such as anatomy, genetics, microbiology, and physiology. They have a chance to experience the realms of science and medicine through dialogue, lab assignments, and weekly classes taught by medical students at the medical center.

Evaluation
Students are evaluated each semester based on their attendance, test performance, and knowledge of materials taught in the class.

Health Professions Recruitment Program (HPREP)
ENR-NY-12

Directors
Robin Mitchell
Dara Raspberry
Diana Digoy (Coordinator)

Address
Cornell University Medical College
Office of the Associate Dean for Student Affairs & Equal Opportunity Programs
445 East 69th Street, Room 319
New York, NY 10021
Tel: 212-746-3390
Fax: 212-746-8066

Institutional Sponsor
Cornell University Medical College

Institutional Partner
None

Year Begun
1988

Duration of Program
10 weeks after school

Average Number of Participants
60 per year

Grade Level of Participants
Grades 10 to 11

Objectives
To provide students with minority physician and medical student role models, lectures on medical and scientific issues, and small group workshops on a wide variety of related subjects in order to encourage them to enter the medical field.

Content
Participation in this program is limited to high school sophomores and juniors from the underrepresented minorities who are interested in medicine. Each week the students attend a lecture by a minority physician and small group discussions led by medical students. Topics covered include gross pathology of the heart, effective study skills, taking the SAT, and the college application process.

Evaluation
About 540 students have participated in this program.

Science & Technology Program (STEP)
ENR-NY-13

Director
Marlene Klyvert, Ph.D.

Address
Columbia University School
of Dental & Oral Surgery
630 West 168th Street
P & S 3-452D
New York, NY 10032
Tel: 212-305-3573
Fax: 212-305-1034

Institutional Sponsor
Columbia University School
of Dental & Oral Surgery

Institutional Partner
None

Year Begun
1985

Duration of Program
Year round (8 months during academic year & 5 weeks during summer)

Average Number of Participants
130 per year

Grade Level of Participants
Grades 7 to 12

Objectives
To provide minority and/or economically-disadvantaged students to gain access to licensed professions.

Content
This program provides supplementary basic educational experiences, career counseling, role models, tutorial sessions, and educational activities all held in structured settings. Some students are selected and given an opportunity to work on research projects with the New York Science Academy. During these five weeks, they also attend seminars, prepare projects, and make presentations before a panel of professionals and peers. Field trips to cultural, scientific, and technical facilities are also included.

Evaluation
Of the five graduating classes with a total of 230 graduates, about two-thirds have entered college and chosen health professions.

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Gateway to Higher Education Program
MAG-NY-01

Directors
Morton Slater, Ph.D.
Elisabeth Iler, J.D.
Lisa Bright (Administrator)

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City University of New York Medical School
94-50 159th Street
Science Building, Room 112
Jamaica, NY 11451
Tel: 718-523-6301/05
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Addresses (Gateway to Higher Education)
Brooklyn Technical High School
Judith Cohen (Coordinator)
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Erasmus Hall High School
Keturah Nubyahn (Coordinator)
Tel: 718-282-8079
Jamaica High School
Marguerite Durkin (Coordinator)
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John F. Kennedy High School
Eleanor Delfyett (Coordinator)
Tel: 718-562-5756
Port Richmond High School
Marie Monet (Coordinator)
Tel: 718-273-3600

Institutional Sponsor
City University of New York Medical School

Institutional Partners
New York Board of Education,
New York State Science & Technology
Education Program (STEP)

Year Begun
1986

Average Number of Participants
800 per year

Grade Level of Participants
Grades 9 to 12

Objectives
To demonstrate that minority students who perform at least at grade level upon entry to high school and who are given appropriate supports can pursue higher education and attain high level professional careers in science, medicine, and teaching. A major goal is to increase the number of Black and Hispanic physicians.

Content
The program includes a carefully structured sequence of courses with an enriched curriculum taught by a team of teachers who are sensitive to minority students. It offers support and resources that include tutoring, increased guidance, educational trips, smaller classes, mentorships, and summer programs. Students take four years of science, math, English, advanced placement and college courses.

Evaluation
Outstanding academic performance has been achieved as measured by SAT scores, the pass rate on the New York State Regents' examinations in biology and math and in acceptances with substantial financial aid to elite colleges and universities.

High School Fellows Program
NIH-NY-03

Director
Veva H. Zimmerman, M.D.

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New York University School of Medicine
Office of the Dean
550 First Avenue
New York, NY 10016
Tel: 212-263-5373
Fax: 212-725-2140

Institutional Sponsor
New York University School of Medicine

Institutional Partner
None

Year Begun
1985

Duration of Program
8 weeks during summer

Average Number of Participants
40 per year

Grade Level of Participants
Grades 10 to 12

Objectives
To enrich participants by offering sessions on development of ideas, communications and self-expression, self-esteem and judgement, comprehensive educational planning, task efficiency, overcoming resistance to illness, identification with professionals, assimilation into clinical settings, awareness of socioeconomic-environmental context, and scientific analytical thought.

Content
The program gives students a direct research experience with individual faculty members. The students learn skills development in the written and oral expression of science ideas. They use computer and interactive video learning models. Seminars on ethics, laboratory techniques, and science are offered. Students are also given advice on colleges and financial aid. Field trips are included too.

Evaluation
Evaluation is based on anecdotal review of day-to-day experiences, recommendations by staff and faculty, student performance, and their feedback. The program is also reviewed by a sociologist who is an expert in school design and a psychologist who is an expert in motivation.

Minority High School Student Research Apprentice Summer Program
NIH-NY-07

Director
Jules Cohen, M.D.

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University of Rochester
School of Medicine & Dentistry
601 Elmwood Avenue, Box 601
Rochester, NY 14642
Tel: 716-275-2175
Fax: 716-273-1016

Institutional Sponsor
University of Rochester
School of Medicine & Dentistry

Institutional Partner
None

Year Begun
1983

Duration of Program
8 weeks during summer

Average Number of Participants
13 per year

Grade Level of Participants
Grades 10 to 12

Objectives
The program gives selected students an opportunity to work with scientists involved in health-related research. These scientists are committed to developing in the students an understanding of the research in which they participate and the technical skills involved.

Content
Thirteen highly competitive and academically talented high school students are invited to do laboratory research at the University of Rochester Schools of Medicine and Dentistry. They work as apprentices in the preceptor's laboratory for an eight-week period and are paid a stipend for their work. At the end of the program, they present the results of their research at a special forum attended by preceptors and other medical center faculty. The participants also participate in a seminar series and receive career counseling.

Evaluation
N/A

Science Outreach Program
NIH-NY-08

Directors
Bonnie Kaiser, Ph.D.
Bruce S. McEwen, Ph.D.

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Rockefeller University
P. O. Box 53
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Tel: 212-327-7431
Fax: 212-327-7519
Website: http://www.rockefeller.edu/outreach

Institutional Sponsor
Rockefeller University

Institutional Partners
Prep-for-Prep, Public, Private, & Parochial Schools in the Tri-State Area

Year Begun
1992

Duration of Program
8 weeks or more

Average Number of Participants
10 per year

Grade Level of Participants
From age 16 to recent high school graduates

Objectives
To provide mentoring and original research opportunities for motivated and creative students and teach them about research.

Content
Students get to do supervised and original research in a leading laboratory. Other activities include attending lab meetings, journal clubs, and writing essay and research reports. Sessions on lab safety, E-mail, Internet, and library resources are also offered.

Evaluation
All our participants have gone on to college and indicated that their first year of college science courses was more enjoyable and made more sense as a result of the research experience at Rockefeller. Those who had not already chosen to major in the sciences reported that the program positively influenced them in that direction. Some students, using their research reports, have qualified as semi-finalists in the Westinghouse Science Talent Search.

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Minority High School Research Apprentice Summer Program
NIH-NY-09

Director
Gerald E. Thomson, M.D.
Tiffany M. Simon, Ed.M. (Coordinator)

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Columbia University
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New York, NY 10039
Tel: 212-305-4157
Fax: 212-305-1343

Institutional Sponsor
Columbia University
College of Physicians & Surgeons

Institutional Partner
None

Year Begun
1985

Duration of Program
6 weeks during summer

Average Number of Participants
10 students, 4 teachers per year

Grade Level of Participants
High school juniors & seniors

Objectives
To give students who are interested in medicine and research careers a hands-on laboratory experience.

Content
The program is for students who are New York City residents. Students are selected based on their academic excellence in science and math and recommendations from their teachers and guidance counselors. They are assigned to laboratories where they do research. They also have an opportunity to experience the realms of science and medicine through dialogue and weekly seminars with prominent researchers at the medical center. At the end of the program, students present findings of their research experiences in an oral and written format.

Evaluation
N/A

Ventures into Health Careers Program
ENR-NC-01

Director
Deborah B. Ramey, M.Ed.
Melinda H. Payne (Coordinator)

Address
Eastern Area Health Education Center (EAHEC)
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Greenville, NC 27835-7224
Tel: 919-816-5231
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Institutional Sponsor
Eastern Area Health Education Center

Institutional Partners
East Carolina University Schools of Medicine, Nursing, Allied Health Sciences, Pitt County Memorial Hospital, Pitt Community College

Year Begun
1994

Duration of Program
Academic year (2-week summer component)

Average Number of Participants
20 per year

Grade Level of Participants
Grades 9 to 10

Objectives
To introduce highly motivated minority and disadvantaged youth from eastern North Carolina to the various careers and opportunities in health care.

Content
The summer residential program provides an opportunity for students to experience a variety of health careers through academic preparation modules, observation, and self-awareness exploration. Activities include learning experiences that focus on the skills necessary for success in high school and college preparation. Academic modules which consist of math and science, reading and writing, personal development, academic and social counseling are complemented with clinical experiences. Clinical experiences include shadowing health professionals in work settings, visits to health care facilities and health sciences schools. In addition, follow-up sessions on academic skills, personal development, and peer counseling are scheduled during the academic year.

Evaluation
All participants subsequently enrolled in college with a majority choosing science or health majors.

K-12 Teacher & High School Student Program
NIH-NC-06

Director
O. Michael Colvin, M.D.

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Duke Comprehensive Cancer Center
Duke University Medical Center
Box 3843
Durham, NC 27710
Tel: 919-684-3377
Fax: 919-684-5613

Institutional Sponsor
Duke University Medical Center

Institutional Partner
None

Year Begun
1989

Duration of Program
8 weeks during summer

Average Number of Participants
20 per year

Grade Level of Participants
Grades 10 to 12

Objectives
To encourage high school students to pursue careers in biomedical research and the sciences.

Content
Participation in this program is open to all racial and ethnic groups, although the targeted population is minority students and females who are interested in biomedical and behavioral science, health care professions, and cancer research. Students work full-time in the laboratories of the Cancer Center investigators on special research projects designed to give them first-hand knowledge of basic and/or translational research. Additionally, students attend weekly lectures by Cancer Center and Medical Center facilities. They are also invited to round with physicians on inpatient units and observe surgical procedures.

Evaluation
Of the 153 participants, 142 percent have completed high school, 140 have entered college, and about 63 have graduated from college. Of these college graduates, many are attending professional schools. In 1992 a high school teacher component was added. Four teachers have conducted independent research projects under the tutelage of four senior scientist mentors.

Project PROMISE (Precollege Research Opportunities for Minorities in Health Science Education) NIH-NC-07

Director
Andrew R. Harver, Ph.D.

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Project PROMISE
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Fax: 704-547-3096

Institutional Sponsor
University of North Carolina at Charlotte

Institutional Partner
Carolinas Medical Center at Charlotte

Year Begun
1995

Duration of Program
8 weeks during summer

Average Number of Participants
14 students, 2 teachers per year

Grade Level of Participants
Grades 9 to 12

Objectives
The research experience provides students with a personalized and hands-on exposure to health-related research in order to stimulate interest and encourage decisions towards careers in the health sciences. It also allows teachers to keep pace with the growth of knowledge in health-related areas.

Content
Program participants are selected from high schools in the greater Charlotte-Mecklenburg School System. Students should have a demonstrated interest in or aptitude for a career in the health sciences. They must belong to a group underrepresented in biomedical or behavioral research nationally and be recommended by the school's Minority Achievement Program representative. Participants are assigned to a faculty member from the campus of UNC Charlotte or a research scientist from the campus of Carolinas Medical Center and become engaged in a laboratory project that emphasizes application of the scientific method. Students maintain a journal of their ongoing activities and report on their achievements at a symposium at the end of the program. The laboratory experiences are complemented by weekly lunches hosted by faculty from both institutions, writing, computer, and career workshops, and tours of research facilities at both the host and partner institution.

Evaluation
Of the participants enrolled in the program the first two years, all of the high school graduates (19) will be attending college this fall, of which seventy-nine percent have declared majors in the behavioral or natural sciences.

Cleveland Clinic Foundation/John Hay High School Partnership Program
MAG-OH-01

Director
Nedra A. Starling, M.P.H.

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Cleveland Clinic Foundation
John Hay Partnership Office KK-20
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Tel: 216-445-6605 (Partnership Office)
216-444-3938 (Nedra A. Starling)
216-444-0878 (Secretary - Michelle Huffman)
Fax: 216-444-7021

Institutional Sponsor
Cleveland Clinic Foundation

Institutional Partners
Cleveland Board of Education,
John Hay High School

Year Begun
1989

Duration of Program
Academic year

Average Number of Participants
Approximately 300 per year

Grade Level of Participants
Grades 9 to 12, ages between 13 to 18

Objectives
John Hay High School teams up with the Cleveland Clinic Foundation (CCF) to offer a thematic school curriculum within a comprehensive high school. This program blends in-depth study of the health sciences with opportunities in health care. The curriculum emphasizes health sciences, health education, and health career awareness. It is designed to improve the academic preparation and performance of the students. The goal is to ultimately increase the students' access and entry into postsecondary education and health or medical careers.

Content
The program is for students who have demonstrated academic excellence and interest in pursuing a career in the health care field. It is a demanding four-year college prep curriculum and follows a prescribed course of study. Honors and advanced placement courses are also available. Through the partnership, the CCF sponsors guest lecturers, classroom demonstrations, on site observations, field trips, shadowing opportunities, mentoring relationships for students and employees, tutoring sessions, opportunities for summer employment or placement, and internship experience (junior year) in patient care, health care administration, and/or health research and technology.

Evaluation
The CCF/John Hay High School Partnership Program graduated its first class of 20 seniors this year. All of the graduates, most of whom are Black, were accepted into four-year college programs. Eleven of the students had a GPA of 3.5 or better.

Underrepresented Minority Teacher-Student Research Program
NIH-OH-01

Director
Lawrence E. Leguire, Ph.D.

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Children's Hospital
Department of Ophthalmology
700 Children's Drive
Columbus, OH 43205
Tel: 614-722-6129
Fax: 614-722-6130

Institutional Sponsor
Columbus Children's Hospital

Institutional Partner
Ohio State University

Year Begun
1986

Duration of Program
8 weeks during summer

Average Number of Participants
14 per year

Grade Level of Participants
High school juniors

Objectives
To provide medical researchers as role models for students and encourage them to attend college and be interested in medical research. The ultimate goal is to increase the number of minority physicians and biomedical researchers and to improve ties between the sponsor institution and area high schools.

Content
This program provides eight weeks of continuous summer research work. Activities include tours of medical research laboratories and weekly seminars on research-related topics such as computer graphics, animals in research, ethical issues in health care, the human genome project, research methodology, and statistics.

Evaluation
As of 1994, we have been able to track 74 percent of our program participants. Data showed that 95 percent either were currently enrolled, or had already graduated from college. Eighty percent have gone on to do postgraduate work.

Biomedical Sciences Program
MAG-OK-03

Director
Brian Staples

Address
Northeast High School for the
Biomedical Sciences & Health Careers
Oklahoma City Public Schools
3100 North Kelley
Oklahoma City, OK 78111
Tel: 405-424-1491
Fax: 405-425-4609

Institutional Sponsor
University of Oklahoma
Health Sciences Center

Institutional Partners
Oklahoma City Public Schools,
University of Oklahoma-Norman,
MetroTech Vocational Technical Center

Year Begun
1981

Duration of Program
Academic year

Average Number of Participants
120 per year (30 per grade level)

Grade Level of Participants
Grades 9 to 12

Objectives
The Biomedical Sciences Program is a rigorous four-year science education and health career exploration program designed to prepare students for college and higher education and to pursue careers in medicine, dentistry, research, allied health, public health, computer science, and engineering.

Content
The program instructs students in basic science areas including biology, chemistry, and microbiology/research design. A senior practicum held on campus of the Health Sciences Center provides a rotation and mentorship experience for participants in a variety of health and science professions. Students participate in science symposiums, science competitions, science fairs, special lectures, and individualized mentoring. Advanced placement courses are offered in many subjects and students have an option to take college courses while still in high school.

Evaluation
Students are assessed through instructor-developed classroom examinations and standardized testing applicable to the public school system and university admittance. A minimum GPA of 3.0 must be maintained for retention in the program. Many participants have satisfactorily participated in local, regional, and national competitions.

William Penn High School Health Academy
MAG-PA-02

Director
Penelope C. Cutler, Ed.D.

Address
William Penn High School
Broad & Master Streets
Philadelphia, PA 19122
Tel: 215-232-8047
Fax: 215-232-8047

Institutional Sponsor
Allegheny University of the Health Sciences

Institutional Partner
Philadelphia High School Academies, Inc.

Year Begun
1993

Duration of Program
Academic year

Average Number of Participants
120 per year

Grade Level of Participants
Grades 9 to 12

Objectives
The Health Academy is a "school within a school." It prepares students so that they can attend college or obtain training in health sciences upon graduation. It motivates them to excel in, and complete high school and informs them about careers in health.

Content
The William Penn Health Academy offers an academic program that requires students to take four years of college preparatory math, science, and English. All students take the same courses in ninth and tenth grades, including History and Spanish. In the eleventh and twelfth grades, students have a choice of taking technical courses, apprenticeships, and continuing with their college preparatory subjects. All participants are required to complete junior and senior projects as part of the program.

Evaluation
Of the 30 first-year Academy students, 70 percent completed credits to progress to the tenth grade.

MCP*Hahnemann University Medical School
Minority High School Student
Research Apprentice Program
NIH-PA-01

Directors
Robert F. McMichael, A.B.
Sarah S. Garber, Ph.D.

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Address (Sarah S. Garber)
MCP*Hahnemann Medical School
Allegheny University of the Health Sciences
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Philadelphia, PA 19129
Tel: 215-991-8570
Fax: 215-843-5810

Institutional Sponsor
MCP*Hahnemann Medical School
Allegheny University of the Health Sciences

Institutional Partner
None

Year Begun
1984

Duration of Program
8 weeks during summer

Average Number of Participants
20 students, 4 teachers per year

Grade Level of Participants
Grades 9 to 12

Objectives
To stimulate among minority high school students an interest in pursuing careers in medical science, biomedical research, and the health professions by developing in them an understanding of medical research and technical skills needed.

Content
This program is for students with high motivation, with emphasis on ability and scholastic aptitude. It consists of three components: dedicated instruction for enrichment, hands-on research, and independent study.

Evaluation
The results of a seven-year evaluation study of 102 participants are as follows. Approximately 98 percent of these students entered college upon completion of high school with a retention rate of 93 percent. About 67 percent are majoring in premedical science. Sixteen students have earned their undergraduate degrees. Two are in medical school, three are in graduate school majoring in the basic sciences, one is in veterinary school, and two are graduate pharmacists (*Hahnemann University Research News*, Vol. 2, No. 2, September 1993, pp.19-21).

Monell High School Student Research Apprenticeship Program
NIH-PA-02

Director
Julie A. Mennella, Ph.D.
Moira Milligan (Coordinator)

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Monell Chemical Senses Center
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Philadelphia, PA 19104-3308
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Fax: 215-898-2084

Institutional Sponsor
Monell Chemical Senses Center

Institutional Partner
None

Year Begun
1981

Duration of Program
10 weeks or more

Average Number of Participants
15 to 20 per year

Grade Level of Participants
Grades 9 to 12

Objectives
To provide minority high school students with scientific research experience and training and to stimulate interest in biomedical research and the health professions.

Content
The program allows each student to work full-time during the summer in a laboratory at the Monell Center, a nonprofit scientific institute devoted to research on taste, smell, and chemical irritation. The laboratory experience enables the students to understand the nature of research and acquire technical skills. The summer program also includes workshops on preparing resumes and college applications, financial aid opportunities for minorities and women in science, and research findings and opportunities in the chemical senses and biomedical research.

Evaluation
Every student who participated in our program since 1990 has enrolled in college after high school graduation. Over 70 percent of these students majored in science during their freshman year in college.

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Minority Student Research Apprenticeship Program
NIH-PA-07

Director
Glen Gaulton, Ph.D.
Gwen Tolbert (Coordinator)

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Biomedical Graduate Studies
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Institutional Sponsor
University of Pennsylvania

Institutional Partner
Philadelphia Public School System

Year Begun
1985

Duration of Program
8 weeks during summer

Average Number of Participants
25 per year

Grade Level of Participants
Grades 10 to 12

Objectives
To stimulate the educational development of minority high school students and encourage them to pursue careers in biomedical research and health professions.

Content
Students participate in the ongoing research of faculty scientists in the University of Pennsylvania Schools of Arts and Sciences, Medicine, Dentistry, and Veterinary Medicine. Research activities are supplemented by weekly research seminars and an orientation on basic laboratory techniques and biological principles. At the end of program, each student prepares a summary of the work accomplished and presents it orally to fellow students and faculty mentors. This program also offers a similar laboratory-based experience for teachers of minority high school students who wish to broaden their knowledge of biomedical sciences.

Evaluation
Since 1990, 125 students have participated in this program. The majority of these participants have enrolled in college and concentrated in science-related fields.

Indian Science & Technology Enhancement Program (InSTEP)
ENR-SD-01

Director
Gerald J. Yutrzenka, Ph.D.
Dawn Anne Eagle (Coordinator)

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School of Medicine
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& Pharmacology
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Vermillion, SD 57069
Tel: 605-677-5156
Fax: 605-677-5781

Institutional Sponsor
University of South Dakota
School of Medicine

Institutional Partner
None

Year Begun
1994

Duration of Program
5 to 7 weeks during summer

Average Number of Participants
6 students per year

Grade Level of Participants
Grades 10 to 11

Objectives
To increase Native American participation in health care professions, biomedical research, and graduate studies in biomedical science disciplines.

Content
Native American high school students from South Dakota who are interested in science and health careers are eligible to apply. Students participate in various activities such as site visits to hospitals and clinics, hands-on laboratory projects and experiments, and job shadowing opportunities. Weekly meetings on the use of animals in research, library resources, and ethics and misconduct in scientific research are also offered. Students also take part in the social activities of the Upward Bound Program at the University of South Dakota. Aspects of Native American perspectives on health, wellness, and science are some of the features that InSTEP tries to incorporate in this program.

Evaluation
Students keep daily journals of their experience in InSTEP. Evaluations are conducted at the start and the end of the program. Students and presenters complete evaluations of each departmental visit, the content of the presentations and their applicability to Native American teachings and philosophy. All of the participants are enrolled tribal members from South Dakota with most of the students from reservation-based schools.

Minority High School Student Research Apprentice Program
NIH-SD-01

Director
Barbara E. Goodman, Ph.D.

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Fax: 605-677-5787

Institutional Sponsor
University of South Dakota
School of Medicine

Institutional Partner
None

Year Begun
1989

Duration of Program
7 weeks during summer

Average Number of Participants
8 per year

Grade Level of Participants
High school sophomores through seniors

Objectives
To introduce biomedical research to minority high school students from South Dakota.

Content
Students work in a biomedical research laboratory with a faculty mentor, research assistants, undergraduate, medical, and graduate students. Other activities include weekly group meetings with other research apprentices, special tours of campus facilities and resources, workshops on ethics and misconduct in scientific research, and discussion of American Indian perspectives in areas of scientific thought and research. They also take part in the social activities of the Upward Bound Program at the University of South Dakota. Students are asked to complete a narrative about their experiences in the program.

Evaluation
In 1993, 90 percent of the students who had participated in the program were enrolled in colleges or universities. All of the participants have been American Indians and most of the students are from reservation-based schools. A number of them are now enrolled at the University of South Dakota in science or health-related programs. Some have gone on to pursue science or engineering programs at other universities.

Minority Engineering Summer Research Program
NIH-TN-05

Director
Carolyn R. Williams, Ph.D.

Address
Vanderbilt University
School of Engineering
P. O. Box 6006, Station B
Nashville, TN 37235
Tel: 615-322-2724
Fax: 615-343-6702

Institutional Sponsor
Vanderbilt University
School of Engineering

Institutional Partner
None

Year Begun
1977

Duration of Program
5 weeks during summer

Average Number of Participants
30 per year

Grade Level of Participants
Grades 11 to 12

Objectives
To give students a preview of academic life by exposing them to a variety of career options and helping them deal with the demands of an engineering curriculum.

Content
This is a residential program that offers classroom and research opportunities in seven major areas of study. Students get a chance to explore the math and science aspects of an engineering curriculum and participate in a regular summer school course. They spend the mornings in the classrooms and work on research projects with Vanderbilt University faculty during the afternoons. Other activities include lectures by visiting industrial leaders and field trips to industry sites. There is a teacher component which offers minority high school science teachers an opportunity to update their research skills through exposure to new technology.

Evaluation
N/A

Summer Science Camp II
LAB-TX-02

Director
Marsha A. Ricks, M.S.

Address
University of Texas Medical Branch
301 University Boulevard, Route 0823
Galveston, TX 77555-0823
Tel: 409-772-0135
Fax: 409-747-0957

Institutional Sponsor
University of Texas Medical Branch

Institutional Partner
Galveston County School District

Year Begun
1995

Duration of Program
7 weeks during summer

Average Number of Participants
15 per year

Grade Level of Participants
Grades 9 to 11

Objectives
To provide students with specific hands-on laboratory experiences and broaden their knowledge about basic research and clinical medicine.

Content
Students are selected on the basis of academic proficiency, interest, and recommendations from their science or math teachers. Participants are involved in specific laboratory processes and medical research projects. The application of basic research to clinical medicine is demonstrated through a series of tours and career professional shadowing experiences. This program has a separate enrichment component for seventh- and eighth-graders known as Summer Science Camp I.

Evaluation
N/A

High School for Health Professions (HSHP)
MAG-TX-01

Director
Charlesetta Collins

Address
High School for Health Professions
Texas Medical Center
3100 Shenandoah
Houston, TX 77021
Tel: 713-741-2410
Fax: 713-746-5211

Institutional Sponsor
High School for Health Professions

Institutional Partners
Baylor College of Medicine,
Houston Independent School District

Year Begun
1972

Duration of Program
Academic year

Average Number of Participants
700 per year

Grade Level of Participants
Grades 9 to 12

Objectives
To provide a challenging, well-balanced college preparatory program which focuses on educational experiences in science and the health professions and furthers an understanding of our multicultural community.

Content
The HSHP offers a comprehensive academic program enhanced by extensive laboratory and simulated health care experiences. Students must select seven classes per semester. The curriculum includes required courses in English, math, science, and social studies, coupled with classes in foreign languages and fine arts. Advanced placement is available in English and math classes. Unique course offerings include health science orientation, health care science, medical laboratory, patient care, dental assisting, advanced health science, and student preceptorships. Other benefits of the HSHP include state-of-the-art facilities, exposure to health care and basic science research, learning opportunities in the Texas Medical Center, close association with Baylor College of Medicine, participation in a wide range of local and national student organizations, and access to the Lyondell Petrochemical Computer Resource Center.

High School for Health Professions (HSHP) Houston
MAG-TX-01

Evaluation

The High School for Health Professions (HSHP) Houston is ranked highest among the District schools. In 1991-93, HSHP students led all schools in the Houston Independent School District Texas Assessment of Academic Skills test (TAAS) in language arts and math. To date, HSHP has graduated 2,581 students. The ethnic distribution of graduates has been 52 percent Black, 18 percent Hispanic, 22 percent White, and 8 percent Asian. Each year, a majority of the graduating students and other members of the student body indicate that their primary career interests lie within the health professions. Over 96 percent of all HSHP graduates go on to college, many with academic scholarships.

A study of HSHP graduates (1975-1987) was done by Baylor College of Medicine to determine their current career status and to identify factors that have assisted or constrained the graduates in relation to career goals. Of the 951 respondents, 806 or 85 percent had completed at least one semester of college, and 31 percent had elected to attend institutions of higher education in the Houston area. Overall, 55 percent of the respondents indicated health professions or the sciences as their primary career objectives, 29 percent were pursuing careers in other areas, and 16 percent did not reply or were undecided.

Fifty HSHP graduates have earned M.D. degrees and an additional 25 students are currently enrolled in medical schools. Sixteen HSHP graduates have attended or are currently attending Baylor College of Medicine, and three graduates serve on Baylor's faculty. Our findings also show that 12 students have earned or are in the process of earning degrees in dentistry while six have earned or are currently working on a degree in veterinary medicine.

HSHP is recognized as a national model and has been replicated in more than 10 locations throughout the country. In addition to receiving awards from the National Science Teachers' Association and the U.S. Department of Education, it has also received substantial extramural funding from The National Science Foundation, The Robert Wood Johnson Foundation, and The Rockefeller Foundation. HSHP has also achieved the U.S. Secretary of Education's Award for Outstanding Vocational Education and the Governor's Award for Academic Excellence.

In 1985 Baylor and the Houston Independent School District strengthened its partnership with the HSHP through the Dean of Instruction contract, which provides for curricular support from Baylor faculty. The contract was renewed in 1989.

Northside High School Magnet for the Health Professions Preceptorship Program
MAG-TX-02

Director
Robert L. Kaman, J.D., Ph.D.

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Health Science Center at Fort Worth
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Tel: 817-735-2670
Fax: 817-735-0181

Institutional Sponsors
University of North Texas
Health Science Center at Fort Worth
Fort Worth Independent School District

Institutional Partner
None

Year Begun
1982

Duration of Program
Academic year

Average Number of Participants
80 per year

Grade Level of Participants
High school juniors

Objectives
To enhance students' experience in the laboratories and clinics in a health science center and encourage students to pursue careers in the biomedical sciences.

Content
Students work for three hours each day, five days per week during the school year in the research labs and clinics. They work with faculty, other students, and staff and learn about patient care and research protocol. After each preceptorship, they evaluate their experiences by completing a questionnaire.

Evaluation
N/A

Health Professions Academy at Socorro High School
MAG-TX-03

Director
Nancy Sochat, R.N.

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Institutional Sponsor
Socorro Independent School District (SISD)

Institutional Partners
Thomason General Hospital
Columbia Medical Center East
Rio Vista Rehabilitative Hospital
El Paso Community College
Texas Tech Regional Medical Center

Year Begun
1991

Duration of Program
Academic year

Average Number of Participants
280 per year

Grade Level of Participants
Grades 9 to 12

Objectives
To introduce students to health careers via role models, speakers, and practical experiences; develop students' academic skills through early identification and remediation of academic deficits, integration of the core curriculum with a health care focus, peer tutoring, preparation for standardized tests, and honors courses; and develop skills for career entry and certification as nursing assistants, dental assistants, medical laboratory assistants, unit coordinators, medical transcribers, EKG technicians, phlebotomists, and home health aides.

Content
This Academy is a four-year magnet program housed in a large comprehensive high school and is open to all SISD students. Students are recruited and selected by demonstration of their interest and ability to pursue the rigorous academic and vocational curriculum. Small blocked classes, integrated curriculum, and clinical experiences develop academic, study, and communication skills for preparation and entry into preprofessional undergraduate training programs. Clinical rotations in health care facilities are organized to introduce students to the various areas of health care, i.e., direct care, administrative and support services, and rehabilitative departments. Students are encouraged to select advanced placement and honors courses and may participate in many community volunteer and campus activities. Interested seniors can choose cooperative jobs and independent research projects for school credit. A certified nursing assistant summer program is also available at El Paso Community College.

Health Professions Academy at
Socorro High School
MAG-TX-03

Evaluation
Socorro became a "school-within-a-school" in 1991. Scores on the Texas Assessment of Academic Study (TAAS) for sophomores (first-time testers) at Socorro High School as a whole indicate substantial increases in reading, writing, and math achievement. In 1992-93, reading scores jumped about 20 points from the previous year, with 55 percent of students passing. In 1993-94, sixty-two percent of the sophomores passed the TAAS reading test. Writing scores went up to 75 percent from 50 percent. Math scores increased from 49 percent passing in 1992-93 to 62 percent in 1993-94: students registered the highest math scores for first-time tested students in the city.

Thirty-three students have completed the four-year program and have been accepted into post-secondary schools or are working in health-related jobs. The freshman class has doubled in size during the four-year development phase. Tracking of students is done by GPA scores, mentor/supervisor evaluations, and standardized tests. This program is a participant in a 10-year study by Manpower Development Research Corporation.

Minority High School Student Research Apprentice Program
NIH-TX-03

Director
Lynn Rew, Ed.D., R.N., C., F.A.A.N.

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School of Nursing
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Austin, TX 78701
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Institutional Sponsor
University of Texas-Austin
School of Nursing

Institutional Partner
None

Year Begun
1993

Duration of Program
8 weeks during summer

Average Number of Participants
8 students, 2 teachers per year

Grade Level of Participants
Rising high school seniors

Objectives
To enrich students' knowledge of nursing research, familiarize them with opportunities at the University of Texas-Austin School of Nursing, help them identify specific career goals, and enhance their prospects for admission to health professional schools.

Content
The program is for students who have demonstrated academic excellence. Students perform research tasks for faculty, attend research seminars, learn literature review skills, data entry, coding and transcribing skills, and carry out the first steps of a research study designed specifically for them.

Evaluation
All students who have participated in the past have entered college. They are also invited to attend the University of Texas-Austin Honors Colloquium. Both students and faculty also complete a formal evaluation at the end of the program.

Anakletic Laboratory Program in the Sciences (ALPS) NIH-TX-05

Director
Edward A. Funkhouser, Ph.D.
Comer O. Patterson, Ph.D. (Co-Director)

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Institutional Sponsor
Texas A & M University

Institutional Partners
Texas Agricultural Experiment Station
Howard Hughes Medical Institute

Year Begun
1987

Duration of Program
6 weeks during summer

Average Number of Participants
20 per year

Grade Level of Participants
Grades 11 to 12

Objectives
This program serves as a bridge to college for rising seniors and graduating seniors. It provides an opportunity for high school students from groups underrepresented in the life sciences to do research. It is designed to excite students about life sciences, give them a realistic view of biological research, provide them with knowledge about the research process, improve their quantitative skills, encourage them to consider postgraduate studies, and establish a cohort of students who will assist each other during their undergraduate years.

Content
The program is for students who have demonstrated or have the potential for academic excellence and have shown an interest in the life sciences. Participants are placed in laboratories under the supervision of a professor and participate in research as part of a research team. Other activities include tours, seminars, and workshops. At the conclusion of the program, students present the results of their research at a symposium. Written reports are published.

Evaluation
More than 85 percent of the students go on to attend four-year institutions. Of those tracked through their undergraduate years, all have pursued professional or graduate degrees.

Summer Science for Senior Underrepresented Minorities Program
NIH-TX-10

Directors
Margaret Ann Goldstein, Ph.D.
Gayle R. Slaughter, Ph.D.

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Houston, TX 77030
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Fax: 713-798-6325

Institutional Sponsor
Baylor College of Medicine

Institutional Partner
None

Year Begun
1994

Duration of Program
8 to 10 weeks during summer

Average Number of Participants
20 per year

Grade Level of Participants
Rising local high school seniors

Objectives
To introduce students to biomedical research, inform them about college preparation, and to ultimately increase the number of minorities in biomedical careers.

Content
Students are matched with faculty mentors and do research on biomedical problems using modern techniques and equipment. They learn to clone genes, assay viruses, and use computers to analyze molecular and cellular structures. Daily seminars by faculty are organized. Advice on choosing careers, majors, courses, colleges, and financial scholarships is provided. Students are encouraged to interact with undergraduate, graduate, medical students, and participants in the SMART program. Faculty members help students develop a personal summary of their experiences.

Evaluation
Students get to evaluate the program to determine if it has helped them learn about research and career opportunities, obtain college admission and scholarship information, and prepare them for college. We have plans to track participants annually through college and postgraduate schools.

Saturday Academic Enrichment Program
ENR-UT-01

Director
T. Samuel Shomaker, M.D., J.D.

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Health Sciences Academy
Office of Minority Affairs
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Salt Lake City, UT 84132
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Fax: 801-585-3300

Institutional Sponsor
University of Utah School of Medicine

Institutional Partner
None

Year Begun
1996

Duration of Program
Academic year

Average Number of Participants
35 per year

Grade Level of Participants
Grades 9 to 12

Objectives
To foster the health professional career aspirations of high school students from underrepresented communities. The program engages students in interactive workshops presented by health professionals from different disciplines. These workshops are intended to expose students to the many options in health sciences while adding to their understanding of health-related and scientific topics.

Content
Students are selected based on their academic standing and their interest in the health sciences. The Health Sciences Academy is presented by professionals and students from the University of Utah Colleges of Health, Nursing, Pharmacy, School of Medicine, and the Physician Assistant Program. It is held one Saturday per month during the school year. Workshops provide students with hands-on experiences in the health sciences as well as academic advising and health professions career guidance counseling. A second phase of the Academy is available for students who have participated in a full year of workshops. These students assist in the presentation of workshops to new students and work on projects with graduate students from health science programs.

Evaluation
This program is assessed using feedback from monthly participant evaluations as well as a comprehensive year-end evaluation. Presenters meet to discuss the effectiveness of these presentations and to modify the program format, if needed.

Summer High School Academic Reach-up Program (SHARP)
ENR-VA-01

Director
Moses Kwamena Woode, Ph.D., D.I.C., F.A.I.C.

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University of Virginia School of Medicine
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Health Sciences Center, Box 446
Charlottesville, VA 22908
Tel: 804-924-2189
Fax: 804-982-1870

Institutional Sponsor
University of Virginia School of Medicine

Institutional Partner
None

Year Begun
1985

Duration of Program
4 weeks during summer

Average Number of Participants
30 per year

Grade Level of Participants
Grades 10 to 12

Objectives
To provide an academic enrichment program featuring a specially designed curriculum, expose students to a variety of role models, including those in the biomedical professions, and help them identify their career options.

Content
Students take classes in humanities, writing, math, and computer/word processing. The humanities course features local leaders and role models as speakers, educational videos followed by discussion groups, and assigned readings. Students also participate in a clinical medicine lecture series and field trips to undergraduate colleges.

Evaluation
Students are required to complete an evaluation form at the end of the four-week program.

Minority High School Student Research Apprentice Program
NIH-VA-03

Director
Louis S. Harris, Ph.D.

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Virginia Commonwealth University
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Institutional Sponsor
Medical College of Virginia/
Virginia Commonwealth University

Institutional Partner
None

Year Begun
1989

Duration of Program
10 weeks during summer

Average Number of Participants
15 students, 2 teachers per year

Grade Level of Participants
Grades 9 to 12

Objectives
This program is designed to increase the number of Blacks and other minorities pursuing careers in basic health and behavioral sciences.

Content
This program is held at the campuses of the Medical College of Virginia and Virginia Commonwealth University. It provides an opportunity for students to do active research with a mentor and develop a variety of research skills. Students select the area they would like to explore with the guidance of a mentor from the Department of Pharmacology and Toxicology or other basic science departments. The research areas include biochemical pharmacology, cardiovascular pharmacology, behavioral and basic pharmacology, immunopharmacology, molecular biology, and toxicology. Students are required to keep a research journal, conduct a twenty-minute oral presentation, and submit a written report.

Evaluation
Of the 57 participants to date, 30 have gone on to college. Most of them are majoring in science or health-related programs, i.e., medicine, dentistry, pharmacy, and nursing. To our knowledge, none has dropped out of college. A database has been developed to track students' academic progress.

Health Sciences & Technology Academy (HSTA)
ENR-WV-01

Director
Ann Lindsay Chester, Ph.D.
Clifford M. Hurd Jr. (Coordinator)

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Robert C. Byrd Health Sciences Center
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Health Sciences & Technology Academy
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Fax: 304-293-4973

Institutional Sponsor
Robert C. Byrd Health Sciences Center

Institutional Partner
West Virginia Department of Education

Year Begun
1994

Duration of Program
Academic year

Average Number of Participants
150 per year

Grade Level of Participants
Grades 9 to 12

Objectives
To enhance the college preparatory education of West Virginia's black and financially-disadvantaged students who are interested in the health sciences and related fields by emphasizing hands-on laboratory projects, leadership development, and community health science projects.

Content
The HSTA has two phases: a one- to three-week campus-based summer enrichment workshop and academic year community-based projects. The campus enrichment activities provide teachers and students with intensive academic support in science, math, and laboratory experiences involving WVU teachers, faculty, scientists, and clinical practitioners. The community-based program stresses local teacher leadership of HSTA clubs. Teachers supported by WVU extension, faculty, parents, and community leaders facilitate integrated science learning, leadership, study skills, and self-esteem building through health-related community service projects.

Evaluation
To date, the HSTA has expanded from 45 students from two counties in 1994 to 250 students in 11 counties. Teacher participation has risen by 74 percent. Ninety percent of the original 45 students continue to be active in the academic year component. The summer program was well received by both teachers and students. Nine out of 10 students expressed the highest regard for the hands-on science component.

Minority High School Research Apprenticeship Program NIH-WV-01

Director
George A. Hedge, Ph.D.
Valerie Lemasters (Coordinator)

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West Virginia University School of Medicine
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Morgantown, WV 26506-9104
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Institutional Sponsor
West Virginia University School of Medicine

Institutional Partner
None

Year Begun
1986

Duration of Program
8 weeks during the summer

Average Number of Participants
12 per year

Grade Level of Participants
Grades 10 to 12

Objectives
This program, predominantly for minority and economically-disadvantaged high school students from rural areas, is designed to stimulate an interest in biomedical research and/or health professional careers.

Content
Students do laboratory research in either the basic sciences or clinical departments at West Virginia University Health Sciences Center. They maintain a one-to-one relationship with their mentors who are active researchers or clinicians. The students learn to conduct research projects and, at the end of the program, present their findings at a symposium. In addition, they attend regularly scheduled luncheons and seminars by external speakers on topics such as research and clinical ethics and use of animals in research. They are encouraged to apply to the program for over consecutive years and to continue their association with their mentors throughout the school year.

Evaluation
Program success is measured by the number of students that are accepted into premedical and biomedical sciences programs.

Minority Research Apprentice Summer Institute
NIH-WI-01

Directors
Ruth Williams, Ph.D.
Gary Williams, Ph.D.
Iris Castro (Coordinator)

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Institutional Sponsor
University of Wisconsin-Milwaukee

Institutional Partner
None

Year Begun
1985

Duration of Program
7 weeks during summer

Average Number of Participants
21 per year

Grade Level of Participants
High school juniors & seniors

Objectives
To encourage and increase the interest of minority high school students in science so they will pursue careers in science and research.

Content
Students spend seven weeks during the summer working as part of a research team led by faculty at the University. Students work on projects and become familiar with their scientific methodology and laboratory techniques. At the end of the program, students give a presentation of their projects.

Evaluation
A majority of the participants continue to pursue higher education after completion of high school.

Minority High School Student Research Apprentice Program
NIH-WI-03

Director
Karla J. Markel, Ph.D., S.B.B.

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The Blood Center of Southeastern Wisconsin
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Fax: 414-937-6332

Institutional Sponsor
The Blood Center of Southeastern Wisconsin

Institutional Partner
None

Year Begun
1984

Duration of Program
8 weeks during summer
(year long component available)

Average Number of Participants
6 students, 1 to 2 teachers per year

Grade Level of Participants
Grades 9 to 12

Objectives
To stimulate among minority high school students an interest in pursuing careers in biomedical research and the health professions.

Content
Students learn laboratory skills and develop research methods by working in the Blood Center on specific projects associated with blood and its components. They get to choose an area of interest and present their findings at the end of the program. In addition, they are exposed to other aspects of biomedical research such as observing surgical procedures, touring medical facilities, and attending lectures on a wide variety of topics. During the school year, they continue to expand on their projects and prepare for science competition.

Evaluation
The program is evaluated continuously by the students, teachers, and Blood Center staff at the end of summer and the school year.

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Association of American Medical Colleges
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Washington, DC 20037-1126